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VOL·1
NO·1

VICTORIAN ENTOMOLOGIST

The Journal of
THE ENTOMOLOGICAL
SOCIETY OF VICTORIA

BINDER—FIX TO FIRST PAGE

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THE ENTOMOLOGICAL SOCIETY VICTORIA

OBJECTS

(a) To stimulate the scientific study and discussion of entomology in all its aspects.
(b) To gather, preserve and disseminate knowledge of Australian species of insects.
(c) To compile a list of known species of Victorian insects.
(d) To bring together in a social and scientific atmosphere all persons interested in entomology.

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Payable in advance and due at the annual general meeting.

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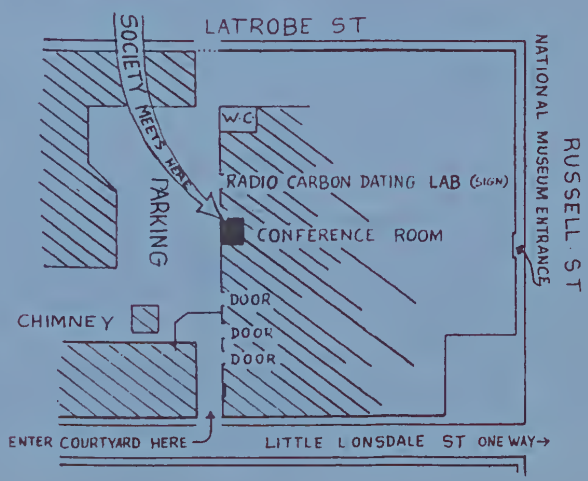
Cheques or money orders for remittance of subscriptions or donations should be made payable to "The Entomological Society of Victoria" and be addressed to the Hon.Treasurer.

MEMBERSHIP

Open to all persons interested in entomology. Applications or enquiries re membership should be addressed to the Hon. Secretary.

MEETINGS

The Society's meetings are held in the Conference Room at the National Museum (see inset). Meetings start at 8 p.m. sharp on the second last Friday of alternate months commencing with the annual general meeting in February. Visitors are always welcome.



CLUB ACTIVITIES

OFFICE BEARERS FOR 1971

President: Mr. Chas. McCubbin, 6 Manniche Ave, Box Hill Nth. (89 9171)

Vice President: Mr. David Holmes

Immediate Past President: Mr. Peter Kelly, 260 The Boulevard, East Ivanhoe.

Hon. Secretary: Miss Sue Beattie, 2 Clyde St, Glen Iris. 3146. (50 5263)

Hon. Editor: Mr. John Barnes, 42 Lucknow St, Mitcham. (874 2748)

Hon. Treasurer: Mr. Bob Condon, 96 Shannon St, Box Hill Nth. 3129.

Committee: Mr. Peter Williams, Mr. Bob Thompson, Mr. Arthur Hall, Mr. Fred Hallgarten, Miss Jenny Forse.

COMING EVENTS

Friday, October 22, 1971.

General Meeting - Mr. Le Soeuff will give a talk on his recent trip.

Sunday, October 24, 1971.

Excursion to Dandenong Ranges.

Friday, October 29, 1971 (Cup Weekend)

Excursion to Little Desert.

Sunday, November 28, 1971.

Excursion to the Dandenong Ranges.

REPORTS AND NOTICES

General Meeting - Friday August 20, 1971.

The President chaired the meeting at which 32 members and friends attended.

Apologies were received from Mr. Dave Crosby, Paul Jacklin and Mr. & Mrs. Le Soueff. Minutes of the previous meeting were read and passed.

In the topic for the evening was "Wood Borers of Lesser Significance" by Mr. Doug Howick of the CSIRO Forests Products Laboratory. Mr. Howick described the many varieties of beetle that infest wood, grain, dried fruit, and bamboo, both native and introduced. For those who wish to

revise the information at this very informative talk, Mr. Howick's paper will be reproduced at a later date by the CSIRO.

The Constitution: Enclosed in this edition is a proposed model of the amended Constitution which has been adjusted to have the Newsletter registered to post as a periodical.

An Extraordinary meeting will be held at the next meeting to decide on the Constitution.

Correspondence: Letters were received from:

1. Mr. George Heath, 34 Oakland Rd, Dovercourt, Harwich, Essex. U.K. on July 4 1971. He is interested in Praying Mantids and wants some egg cases from Australia.
2. Mr. Julio Bick, Sao. Paulo. Brazil, Caixa postal 5760, dated June 25, 1971. He wishes to exchange some Brazilian insects for those of Australia.
3. Mr. Thomas Allen, P.O. Box 152, Beverly, West Virginia. 26252. U.S.A. dated July 18, 1971. He wishes to trade some species of Lepidoptera for Australian species.
4. Melbourne University Anti-Pollution Campaign, C/- SRC Union House, Univ. of Melb., Parkville, interested in an account of our aims, interests and practical activities and research that we are undertaking.
5. A circular was received from the Entomological Soc. of Australia (N.S.W.) no. 215.
6. Mr. Ian Morhaus, P.O. Box 60, Woodburn, N.S.W. 2472 wrote thanking the previous Secretary for his letter.

NEW MEMBERS

We wish to welcome the following members:

Greg Richard, 25 Norwood St, Sunshine. 3020.
Pete Holbery, 3 Coorie Cres, Rosanna. 3084.
James Hutchinson, 24 Junction Rd, Blackburn Nth. 3130.
Glynn McConnell, 22 Reid St, Beaumaris. 3193.

EXHIBITS

Mr. LeSoeuff displayed specimens of *VIRACHOLA SMILIS DALYENSIS* ♀ & ♂ found on the fruit of *STRYCHNOS*. When he revisited Daly River there were none to be found, but at Darwin, 300 empty pupa cases were found.

Mr. Chas. McCubbin displayed a case of Caper White butterlies taken from Botanic Gardens, Melb., Bogong (Vic), Dec. 1970, and Taggerty.

Ray Besserdin displayed some of his general collection.

DISCUSSION:

Noel McFarlane of the Adelaide Museum, has found a new species of *THELAINA* from Alice Springs, which breed around June & July, and also a new species of *GEOMETRICS* on Kangaroo Island; the wings which rest above its head similar to those of a butterfly.

The eggs of the Emerald, *PARATERPINA HARRISONI* have been found.

Mr. LeSoueff mentioned the apparent abundance of stick insects in the Northern Territory. By their large size, they may easily have been of great food value to the aborigines.

Mr. LeSoueff also suggested the possibility of protecting an existing area of *MERMICOFFILA* at Ocean Grove.

Did you know....

That there are several films on the topic of Entomology available free on request from the CSIRO.

They are:- *'The Argentine Ant' - 11 mins., 1956.*

'Biological Control of Insects' - 36 mins., 1960.

'Dangerous Immigrant - The European House Borer' - 15 mins., 1960.

'Embryonic Development of the Light Brown Apple Moth' - 19 mins., 1965.

'Fighting the Cattle Tick' - 22 mins., 1962.

'Insect Tissue Culture' - 17 mins., 1963.

'Some Current Research Activities in the Division of Entomology' 23 mins., 1962.

'The Termite Colony' - 33 mins., 1970.

Requests should be addressed to the Film Librarian, CSIRO Film Unit, 314 Albert St., P.O. Box 89, East Melbourne. Vic. (419 1333).

latest publications

'Australian Butterflies' by Chas. McCubbin.
Published by Nelson. $25.

THE JUNIOR PAGE 6.

Hymenoptera

by Ray Besserdin

The hymenoptera of Heidelberg.

The summary to follow concerns only various insects of this order which I have collected in the past few years *(ICHNEUMONIDAE)*.

The most varied and common wasps found here are the ichneumons; a family widely known all over Australia. Within the family the "Cream-spotted ichneumon", *(Ecthromorpha intrictoro)* is the most common. It is easily distinguished by its entirely black body with rows of creamy spots along the pluera of the abdomen; it also features a few spots on the thorax.

Depending on the sexes, the female has a red frons while the male has a yellow. The dimorphism is also described in the female, like in other species, as in having the abdomen taper intensely from the end to the base. Protruding from the posterior is the rather long and stout cerei, consisting of two egg-laying ovipositors and a defence sting. This is the common set up for wasps with enlarged cerci.
The male however has a long rounded slender abdomen with the usual terminalia type cerci. Legs and antennae are a bright orange, although the males fore and mid-legs are often a yellowy orange. The tarsi number is 5-5-5. Its hind legs are the most powerful, judging by the large stout femer and thickered tibia; the coxa is also large and the trochanter easily visible. Towards the fore-leg the articulation of the legs becomes smaller and finer. The wings are a smoky colour with a semi-circular pterostigma extending posteriorly from the costal vein near the apex. I don't know much about the life histories of this wasp, but I do know it is parasitic on moth pupas of a certain species. The adults emerge usually mid-spring but are frequently found as early as late winter depending on the climatic conditions. The usual habitat are young eucalypts known as *(Eucalyptus obliqua)*.

♀

THE BLACK CREAM-SPOT ICHNEUMON- (ECHTHROMORPHA INTRICTORIA)

NOTE THE POWERFUL HIND LEG

♀

SIDE PROFILE OF THE ABDOMEN OF A TYPICAL ICNEUMON WASP. NOTE THE LARGE SWELLING AT THE END A TAPERING TOWARDS THE BASE.

THE RED CREAM-SPOTTED ICNEUMON (LISSOPIMPLA EXCELSA) NOTE THE SLENDER BUILD.

The next insect concerned is also commonly referred to as a "Green spotted ichneumon" yet the genus is entirely different. The wasp comes across by the name of *Lissopimpla exselsa.*

A wasp also famous for its habit of copulation with a western species of orchid known as *Chrytostylis erecta.* The anotomical appearance is very similar to that of *Ecthromorpha intrictoria* other than the fact of the colouration and the more slender build. In regards to the general anatomy, the wasp is easily recognized by its predominantly red body. The abdomen, like others of its kind, taper anteriorly to the base from a triangular end, and likewise also posessing the typical cerci as found on *Ecthromorpha* sp. The abdomen however is not completely a deep orange or red; in fact beginning from the base, the first four segments are a sort of indigo blue to black, and it is only on these segments that the creamy spots are found. The spots are situated in order as one spot to each tergal plate just behind the next segment; hence the name. Legs on this creature are no where near as powerful as in *Ecthromorpha,* but as in other wasps of its kind, the legs are larger and more powerful in the back and then decreasing in capacity towards the front. The legs are also red except for the hind tibia which are a browny red. The tarsi number is 4-5-5.

Wings are clear around the lateral and hind edges, while the centre is a dark smokeycolour that gives off a blue sheen in the light. Its head is entirely red including the eyes, but unfortunately the eyes fade to black after death. I suppose this is what attracted me about this wasp in the first place. The antennae is red also; and like all ichneumons it is filiform. Males are the same except for the long rounded shape of the abdomen. This wasp is also parasitic; undoubtedly, but I haven't yet got around to finding out precisely on what. However I believe that it attacks both the lava and pupa of *Heteronympha merope merope,* (Common Brown) because the wasps habitat is essentially dry grasslands where this butterfly is common, and it seems that the more common the butterflies, the more common the wasps; at a guess a ratio of about 1 to 30 butterflies. Since the wasp is a nectar feeder; it is often seen scanning Anaseed bushes and is more abundantin large crops of Anaseed. There is a technique which I have worked out in connection with capturing those creatures. As you're walking through the grass look near the top of each blade, and when you encounter an irregular protrusion always investigate it, because frequently enough it is it. Confidentially its a grand way of collecting any kind of insect that inhabits areas such as these. Often when you encounter them, they are cleaning their wings by rubbing the hind legs over them and nibbling on their legs.

(To be continued.)

TO IRON RANGE IN 1968

Z. Le Souef

Having in two collecting trips pretty well covered the Cooktown district, it was decided that an effort be made to visit the next northern centre of entomological interest. Armed with plans and much information from Mr. Geoff Monteith of Brisbane, and Mr George Brooks of Cairns, and a study of various papers on its fauna, we arranged to fly from Cooktown on July 9, 1968. With food for a week, camping gear, a generator and the normal collecting equipment, Mary and I, plus the dog joined aborigines, station owners, and mining executives on the plane for Weipa.

With the Coen races scheduled for the following week, there was very little room in the plane for passengers as most of the space was taken up with large numbers of mail bags containing 'big hats' and other finery for local stockmen to array themselves for the biggest annual event in that part of the world. Pictus, our small fox-terrier had chewed his way out of the regulation Pet-Pak by the time we were airborne so I chained him to the luggage rack instead. The length of chain just allowed him to balance his anterior end on the arm rest of my seat.

We had expected to have a six mile walk out to the hut on the Claudie, so it was with some relief that we found Jim King at the Iron Range airport with his landrover ready to take us out. It was our good fortune to find a fellow collector in Mr. Tom Guthrie already in occupation of the hut. He had brought his Combie up from Cairns by ship and kindly moved out to make room for us.

It was surprising, visiting the famous Claudie for the first time to see so little rainforest. We had expected it to be like the Bloomfield, with miles of jungle, whereas most of the countryseemed to be open eucalypt forest. However near the hut there is quite a large tract of rainforest, and strips along various nearby creeks.

As soon as we had settled in, I took the net along the track towards Portland Roads. Despite the hot sunny day, there were only two species of butterfly to be seen. However, on later days we were gradually able to increase the number of species taken. The big *Ornithoptera* which had been there in numbers a few weeks before, (seen by Mr.Monteith) was almost over, two females being seen and one taken. Apart from *Pachliopta polydorus*, none of the species were seen in numbers.

The generator we had gone to the trouble to bring with us was not a great success. Despite warm drizzly nights the only species to be attracted was the widespread *Ochrogaster contraria*.

Mr. Tom Guthrie took us to Portland Roads for a night, a most interesting experience. Here we slept in our sleeping bags on the floor of one of the units of the warf shed well-known for its high tide toilet on the seaward end. A young couple operating a portable X-Ray unit were in another section checking on the local aboriginal population. Here I took two larvae of *Jalmenus evagoras eichorni* near the jetty and several *Hypochrysops apelles apelles* on another nearby plant. These were later bred out by Mr. Guthrie on his return home. Several other species of butterfly were taken here, and a mistletoe growing on a tree on the foreshore collected by Mr, Guthrie proved to be of a species not previously recorded.

Although naturally the insect population was our main interest, birds were constantly claiming attention. There were the Palm Cockatoos, Electus Parrots and the many smaller birds. The appearance of a pair of Victoria Birds of Paradise sunning in a jungle tree beside the track was a wonderful sight. With Mr. Guthrie catching some of the smaller exotic species in his mist-net for banding and photography, we were able to see them at close quarters.

Of the various trips we have taken to many parts of the country, this one to Iron Range was really memorable. Pic had but one idea in mind during our stay; that of chasing the very many wild pigs which were everywhere. Seizing an opportunity when we were busy transferring a snake into a bag, he set off unnoticed. A squealing pig and barking in the distance drew our attention to his disappearance. Luckily the sow had not decided to come to the rescue. Taking a sheet of iron out one night to inspect the generator, a small death-adder passed between Mary and myself outside the hut bent on its own business and quite ignoring us

Drizzling rain and cloud put a damper on collecting for several days, but despite this, a fair number of species were recorded

The following is a list of those taken:

NYMPHALIDAE

Danaus chrysippus petilia
Danaus affinis affinis
) *Euploea darchia niveata*
) *Euploea core corinna*
Tallervo zoilus gelo
Hypocysta metirius
Hypocysta aroa angustata
Hypocysta adiante adiante
Hypocysta irius
Melanitis leda bankia
Mycalesis persius persius
Mycalesis termunus termunus
Mycalesis sirius sirius
) *Ypthima arctous arctous*
Neptis praslina staudingereana
Precis orithya albicincta
Cethosia chrysippe imperialis
Cupha prosope prosope
Pantoporia venilia moorei
Pantoporia consimilis consimilis
Phaedyma shepherdi latifasciata

PAPILIONIDAE

Ornithoptera priamus pronomus
Pachliopta polydorus q'landos
Papilio ulysses joesa
Cressida cressida cressida

LYCAENIDAE

(o) *Rapala varuna simsoni*
(o) *Hypolycaena phorbas*
(x) *Narathura madytus madytus*
(x) *Jalmenus evagorus eichorni*
(x) *Hypochrysops apelles apelles*
Hypochrysops apollo apollo
Nacaduba kurava parma
Jamides cyta claudia
Jamides phaseli
Jamides aleuas coelestis
Anthene lycaenoides godeffroyi
Danis danis syrius
Hann R. Hymetus taletum
Hymetus salamandri
Catochrysops panormus platissa
(x) *Euchrysops cnejus cnidus*
Candalides erinus erinus
(o,x) *Philiris innotatus evinculus*

PIERIDAE

Eurema hecabe phoebus
Eurema candida virgo
Eurema smilax
Eurema sana
Eurema laeta lineata
Eurema herla
Delias ennia tindalii
Delias mysis waterhousei
Delias argenthona argenthona
Delias aruna inferna
Delias nigrina
Elodina parthia
Elodina ennatia angulipenni
Elodina perdita perdita
Cepora perimale scyllara

HESPERIDAE

Tagiades japetus janetta
Notocrypta waigensis proserpi
Trapezites maqueeni (Musgrave)
Suniana sunius rectivitta
Telicota colon argeus
Telicota mesoptis mesoptis
Arrhenes dschilus iris
Pelopidas lyelli lyelli
Toxidea inornata
Sabera caesina albifascia

Delias mysis waterhousei was bred from eggs taken by Mr. Tom Guthrie during our stay at Iron Range.

Butterflies taken at Iron Range between July, 9 and July 17, 1968; some at Portland Roads on July 11, (x) and others during a visit to Coen between June 23 and June 28, 1968. (o)

PROPOSED MODEL OF THE ENTOMOLOGICAL SOCIETY OF VICTORIA CONSTITUTION

1. NAME *The name of the Society shall be "The Entomological Society of Victoria".*

2. OBJECT *(a) To stimulate the scientific study and discussion of entomology in all its aspects.*

   (b) To gather, preserve and disseminate knowledge of all Australian species of insects.

   (c) To compile and maintain a list of all known species of Victorian insects.

   (d) To bring together in a social and scientific atmosphere all persons interested in entomology.

3. MEMBERSHIP *Shall consist of:*

   (a) Ordinary Members
   (b) Junior Members
   (c) Student Members
   (d) Country or Associate Members
   (e) Honorary Members
   (f) Exchange Members

   (a) Ordinary Members are persons over the age of 21 years paying an annual subscription to the Club.

   (b) Junior Members are persons under the age of 21 years, paying an annual subscription to the Club.

   (c) Student Members are persons over the age of 21 years, and who are bone fide full-time students of a college or university, paying an annual subscription to the Club.

   (d) Country or Associate Members are persons who, through force of circumstance, are unable to attend Meetings of the Society regularly, paying subscription to the Club.

   (e) Honorary Members are those persons duly elected by the Club, who have rendered or are rendering, distinguished service to the Club, or to the cuase of Entomology. These persons are to be entitled the same priviledges as Ordinary, Junior, Student or Country Members without subscribing an annual fee to the Club.

   Honorary members shall be approved by the Council and elected by a two-thirds majority at an Annual or Ordinary meeting. The number of Honorary Members at any one time shall not excede 10% of the total membership of the Society.

(f) *Exchange Members shall be only those Clubs or Affiliated Societies interested in Entomology, and who send their own magazine to the society in exchange for the "Victorian Entomologist".*

4. NOMINATION AND ELECTION

Applicants for membership shall be nominated and seconded by 2 financial members at any ordinary or annual general meeting, and shall be elected at the succeeding meeting. Election shall be by vote taken on a show of hands, or by ballot if such is demanded by at least 3 financial members of the Society. The nominee shall be declared elected if a majority in favour is obtained.

5. SUBSCRIPTIONS

All Annual subscriptions shall be fixed by the Council of the Society.

All financial, honorary and exchange members shall receive the Society's publication, "The Victorian Entomologist".

All subscriptions shall be payable in advance at the Annual General meeting. The financial year shall terminate on 31 Dec.

6. TERMINATION OF MEMBERSHIP

Membership of the Society will be deemed to have terminated if any member tenders a written resignation to the Secretary, or if any member is not financial after 90 days. Renomination and re-election will be required of persons who resign and wish to rejoin the Society. Persons who are unfinancial for 2 consecutive years may renew their membership by payment of all subscriptions which are in arrears.

7. THE COUNCIL

(a) *The management of the Society shall be vested in the Council.*

(b) *The Council shall compose of the President, Vice President, Immediate Past-President, Honorary Secretary, Honorary Treasurer, News Editor and 8 other Councillors.*

(c) *The Council shall meet bi-monthly, or as often as may be practicable and desirable.*

(d) *The Council shall have the power to make By-Laws with respect to the Publication of the "Victorian Entomologist", or any other matters consistent with the objects of the Society.*

8. ELECTION OF THE COUNCIL

(a) *The Council members shall be appointed at the Annual General Meeting of the Society.*

(b) *Nominations, in writing, and signed by the proposer, seconder nominee, must be in the hands of the Secretary 7 days prior to the Annual meeting.*

(c) *If there are insufficient written nominations, then nominations may be accepted at the Annual General meeting.*

(d) *If there are vacancies on the Council, occurring at the close of the Annual General meeting, or for any other reason during the Societies year, then these vacancies may be filled by invitation.*

(e) *Office-bearers may be dismissed from Office, by a 75% majority vote, at a meeting called specially for the purpose, for which 7 days notice has been given.*

9. OFFICE-BEARERS

The PRESIDENT shall:

(a) *Chair all meetings of the General and Committee Meetings.*

The VICE-PRESIDENT shall:

(a) *Deputize in the absence of the President.*

The SECRETARY shall:

(a) *Keep records of the names and addresses of all members of the Society.*

(b) *Make the necessary arrangements for meetings, and give due notice of all meetings.*

(c) *Keep Minutes of the proceedings of Council and General meetings.*

(d) *Transmit to the News Editor any material for publication in the "Victorian Entomologist".*

(e) *Notify members concerning their subscriptions.*

(f) *Generally transact the routine business of the Society.*

The TREASURER shall:

(a) *Collect and receive all monies on behalf of the Society and deposit these without any deduction whatsoever in a bank approved by the Executive.*

(b) *Maintain records of all financial transactions.*

(c) *Keep a record of members indicating their current financial status.*

(d) *Present a cash statement at each General and Committee meeting.*

(e) *Make payments of all accounts approved for payment; such payment being made by cheque, and signed by either the Treasurer or the President.*

(f) *Set aside from the subscription of each member a sum equivalent to $1.00 per financial member per annum of the total as a subscription to the "Victorian Entomologist", and he shall cause these sums to be separately accounted in the yearly balance sheet and to be duly audited.*

The NEWS EDITOR shall:

(a) *Prepare and publish the "Victorian Entomologist" every second month of the year, prior to the General meeting.*

(b) *Ensure that the cost of publication is kept within any limitations set by the Council.*

(c) *Furnish the Council with a statement of expenditure of each issue of the Newsletter.*

(d) *Arrange for the distribution of the "Victorian Entomologist" to all members entitled to receive it.*

10. MEETINGS *An ordinary general meeting shall be held on the second last Friday of each second month, and/or at such other times as shall be deemed advisable by the Council. The annual general meeting shall be held in February of each year.*

At least 7 days notice of meetings is to be given to members by the Secretary.

11. QUORUM *At ordinary and annual meetings, 15 members, and at Council meetings, 5 members shall form a quorum for the transacting of any business.*

12. ALTERATION OF CONSTITUTION

The foregoing shall not be altered, suspended or added to except at an annual general meeting or at an extraordinary meeting called for such purpose by the executive, and then only when written notice of the amendment has been given to the Secretary at least one month prior to the meeting at which the proposed amendment is to be made.

BY-LAW:

There shall be a Club newsletter entitled "The Victorian Entomologist", which shall be issued at bi-monthly intervals. It shall be forwarded to all financial and honorary members, and associations with which the Society has exchange arrangements. Not more than 25%

of all copies issued each month shall be despatched to non-members of the Society.

An amount of $1.00 per annum shall be included in the annual subscriptions of each member.

This $1.00 per annum shall be set apart for the newsletter, and be separately accounted for in the Annual Balance Sheet, and be duly audited.

VICTORIAN ENTOMOLOGIST

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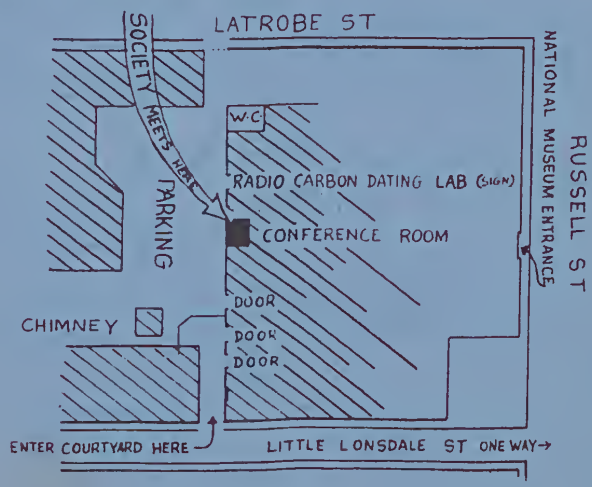


CLUB ACTIVITIES

OFFICE BEARERS FOR 1971

President: Mr. Chas. McCubbin, 6 Manniche Ave., Box Hill Nth. (89 9171)

Vice President: Mr. David Holmes

Immediate Past President: Mr. Peter Kelly, 260 The Boulevard, East Ivanhoe

Hon. Secretary: Miss Sue Beattie, 2 Clyde Street, Glen Iris, 3146 (50 5263)

Hon. Editor: Mr. Ray Besserdin, 35 Quinn St., Heidelberg, 3084

Hon. Treasurer: Mr. Bob Condon, 96 Shannon St., Box Hill Nth 3129

Committee: Mr. Bob Thompson, Mr. Arthur Hall, Mr. Fred Hallgarten, Miss Jenny Forse, Mr. J. LeSouef

Editorial Committee: Mr. Chas. McCubbin, Miss S. Beattie, Mr. Ray Besserdin, Mr. P. Williams, Mr. Anthony Bishop, Mr. J. Wainer.

The 'Victorian Entomologist' incorporates 'Wings and Stings'

COMING EVENTS

Sunday, November 28, 1971

Excursion to the Dandenong Ranges

Friday, February 18, 1972

Annual General Meeting, Member's night

MEETING DATES FOR 1972

April 21st 1972
June 16th, 1972
August 18th, 1972
October 20th, 1972
December 15th.

REPORTS AND NOTICES

Extraordinary Meeting - Friday, October 22, 1971

The President chaired the meeting at which 28 members and friends attended.

The meeting was held in order to discuss the proposed Constitution. The following alterations were made: -

1. Joint members shall be included in the Membership list - proposed by F. Hallgarten, seconded by B. Condon.

2. In view of the Society being dissolved, a Dissolution Clause is to be inserted, proposed by F. Hallgarten, seconded by D. Crosby.

3. Any reference to the word 'Club' in the Constitution is to be changed to 'Society'.

Pending these alterations, the Constitution was unanimously accepted.

General Meeting - Friday, October 22, 1971

Apologies were received from Mr. Clyde Wild, Mr. A. Nebois, Mr. A. Hall, Mr. J. Barnes, Mr. P. Jacklin, Miss J. Forse, Miss White.

The speaker for the evening was Mr. Le Souef who described with slides the very interesting trip that he and his wife took this year to the Northern Territory. It was unfortunate that there was not more time to hear more details of this informative talk.

Representative Councillor for Australian Entomological Society.
Mr. Chas McCubbin has been appointed the Representative Councillor to the Australian Entomological Society, C.S.I.R.O., Canberra, following the resignation of Mr. P. Kelly from the position.

The Newsletter

1. With the retirement of Mr. Barnes as News Editor, the vacancy was filled by Mr. Ray Besserdin. The Society expressed sincere thanks for all the work that Mr. Barnes has done for the Society and the achievement of its first newsletter, 'Wings and Stings'.

2. With the acceptance of the new Constitution, the Secretary shall complete the registration of the newsletter. The registered cost per copy shall be approximately 1¼ cents per copy as against the present 7 cents.

3. To avoid any confusion, the old name of the newsletter, 'Wings and Stings' shall be referred to in the next few copies as being incorporated in the Victorian Entomologist - this was proposed by Mr. Le Souef, seconded by Mr. McCubbin.

4. To undertake the job of gathering, typing and checking information for the newsletter, a Publication Committee was formed at the October meeting.

5. The Society expressed their thanks to Miss S. Beattie on the preparation of the new Journal; Mr. Dave Crosby for the printing of the covers, and Mr. C.McCubbin for the design of the cover.

Correspondence: Letters were received from:

1. Mr. Jack Barnes, dated September 22, 1971, tending his resignation as News Editor.

2. Mr. B. Mackness, President of the Gould League of Townsville, Hermit Park, 4812, dated September 15, 1971, requesting information about the Club in order to become a member.

3. Mr. Stuart Turner, 88 Orchard Road, Erdington, Birmingham, 1324 9JD, Harwickshire, England, received September 29, 1971. He works for the British Government and requires a selection of Australian tropical moths for his work.

4. The Australian Entomological Society Division of Entomology C.S.I.R.O. dated September 28, 1971, requesting (a) the appointment of a Representative Councillor to their Society's governing body. (b) In preparing a 'Directory of Australian Entomology' (for publication in time for the 14th International Congress of Entomology next year) they wish for an alphabetical list of all known Australian Entomologists, their addresses and interests. (c) Circular numbers 217, 218 (d) Journal Volume 10, Number 30, September 1971.

5. Father Rosanna Tazzani, dated August 10, 1971. Address: Via XXSettembre 12, 48024 Massalombarda, (Ravenna) Italy, who wishes to obtain butterflies and beetles from this country.

Mr. P. Williams requests that all members bring in their labelled beetle collections to the next meeting, as he wishes to collect all possible data to make up a beetle distribution map.

INSECT RECORDS: -

New Record for Victoria

Meteronympha mirifica (WONDER BROWN). One fresh female taken near Mallacoota in late January, 1971, by the edge of a lake in a ferny area - A.D. Bishop

Last March and April while breeding Lesser Wanderers, I noticed that all the females emerged from pinkish-gold chrysalids, and the males from normal green pupa cases - Mark Connor

EXCURSION REPORT: October 24, 1971, Dandenong Ranges

The Forestry Commission will notify Mr. McCubbin when areas are to be burnt, so that excursions can be made into the areas to estimate the effects before and after the burning. The reports will be sent to the Forestry Commission as well as written in the Journal when available.

LATEST PUBLICATIONS:

New Books from Periwinkle ($1.50 each)

How to Photograph Australian Wildlife

Australian Bushcraft

Animal Behaviour

Biological Dictionary

Dr. C. N. Smithers

Norfolk Island Butterflies ($1.00 plus postage)

John V. Peters

A Catalogue of the Type Specimens of the Hesperioidea and Papilionoidea (Lepidoptera) in the Australian Museum ($2.00 plus postage)

M.S. Moulds

A Bibliography of the Australian Butterflies (approx. $6.00

Mr. Fred Hallgarten has Entomological pins for sale and Entomological labels designed to fit into a type-writer at 5 cents a sheet.

As this is the last newsletter for the year, the News Editor and Committee express their best wishes to all for an enjoyable and rewarding season.

SOME EFFECTS OF ABNORMAL CLIMATIC CONDITIONS
ON THE BUTTERFLY OREIXENICA CORREAE OLLIFF
By W.N.B. Quick

The apparent effects of altitudinal and local climatic variation on some species of the genus *Oriixenica* has been commented on by a number of entomologists, largely without any positive evidence to substantiate such assumptions.

In the course of preparation of a paper on the interrelationship of these butterflies, and the process of speciation, it became desirable to study these effects in some detail, as it was considered possible that apparent changes in the physical appearance of the butterflies of various localities may be due, at least in part, to factors more directly related to climate and soils.

To facilitate the examination of these effects, a plant of *Poa australis* agg. was established in a 6-inch pot. In order to restrict growth of the grass to something approximating alpine growth periods, winter watering was reduced to the minimum necessary to maintain plant condition, and no nutriment was added to the sand/loam mixture in which the plant was grown.

Oreixenica correae, a species exhibiting marked local variation, and readily available, was selected as a suitable subject, and several worn female butterflies were collected at 4700 feet on Mt. Baw Baw on March 7th., 1971. These were brought to Glen Waverley, altitude approximately 500 feet, and liberated in an enclosure over the grass plant. A number of eggs were laid, both on the grass and the sides of the enclosure, and all hatched in 10-14 days, after which the enclosure was removed.

Although the plant was examined superficially each night, the young larvae were not observed for some weeks, although the tips of the finest leaves appeared to have been eaten. Eventually it was found that the larvae fed only in broad daylight, ascending the foliage at midday.

By the end of May, larvae were approximately 6mm in length, and two months later, when feeding appeared to be restricted to the milder days, they had increased to 10mm. Early in October the grass was enclosed in a net sleeve in order to restrict any tendency of the larvae to wander, and at this stage larvae varied considerably in size, from one small example at 12mms up to 18-19mms. One of the larger larvae was also seen to be a pale biscuit-brown colour, while all previously-seen larvae had been bright green.

On November 5th., it was noticed that an adult butterfly had already emerged, an astonishing four months ahead of the date of capture of the parents, and three months earlier than the species normally emerges in its natural environment. Closer examination of the enclosure revealed that a further two butterflies had previously emerged unobserved. It would seem that the brown colour of the larva observed in October may in fact have been a phenomenon

associated with approaching pupation. A fourth insect emerged on November 10th., all to date being males. At least one almost full-grown larva remained on the grass at this time, presumably the small one observed in October, and which may prove to be parasitised, as it does not appear to have increased proportionately in size over the intervening period.

The grass plant was carefully examined at this stage, and the pupal cases collected. Of these, one example only could be described as being attached by the cremaster, and this so lightly that suspension of the pupa would have been precarious. Two more, also supported at random angles by grass stems and debris, had traces of silk entangled in the hooks of the cremaster, and the fourth, lying on the soil surface, likewise had a single strand of silk attached. These silk traces suggest that a rudimentary suspensory pad may be formed in all cases, but in some may as well have derived from accidental contact with larval silk-track. It appeares that the insect may represent a transitional stage between those species which have a fully-suspended pupa and those more primitive species in which the pupa lies loose on or under the soil.

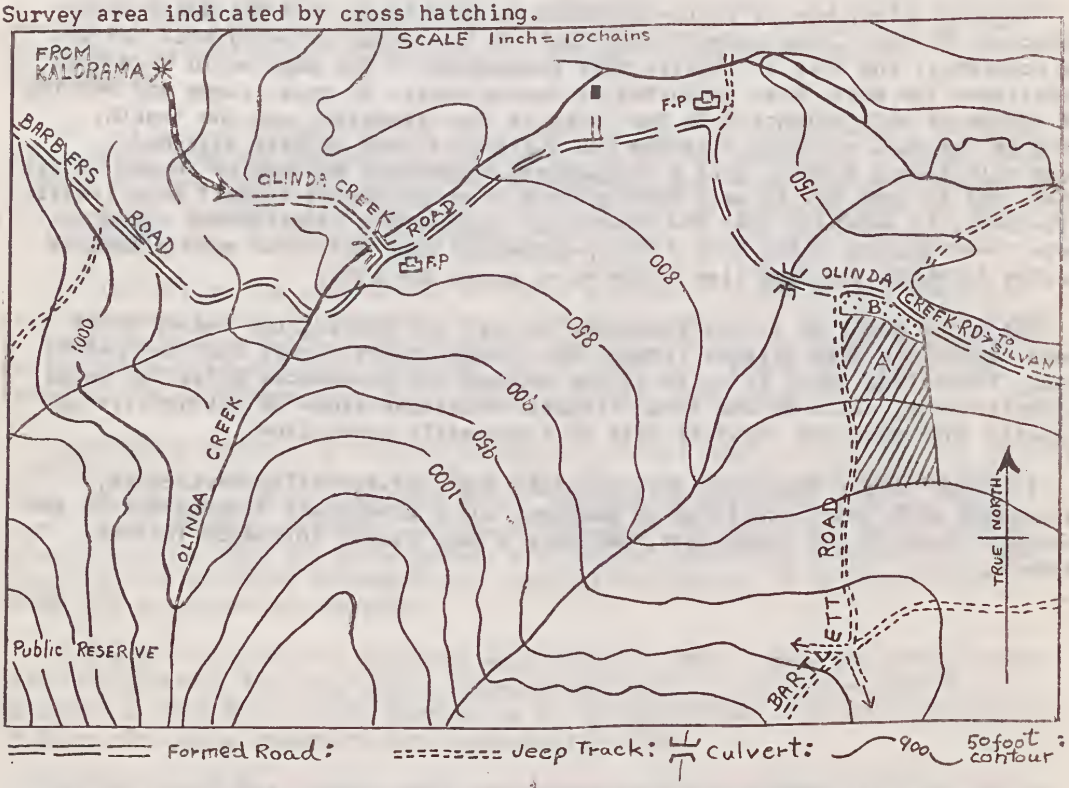
The major point of interest however is that the butterflies reared under these conditions were neither larger, nor conspicuously darker than the parent stock, indicating that, in spite of the obvious and pronounced effect on their metabolic rate, altitude and local climatic variation alone do not greatly or directly influence the physical size of a butterfly population.

It seems likely therefore that rainfall and soil-fertility variations, associated with some localities or seasons, and a consequent fluctuation in the nutrient value of the food-plant, may have a more direct influence in this respect.

CONTROL BURNING-- Long-term effect on understory flora and associated insect fauna, &c.

Report of preliminary survey by Messrs. C.W. McCubbin & W.N.B. Quick, November 10th., 1971.

Survey area indicated by cross hatching.



Locality: Olinda Creek Road, between Kalorama and Silvan Reservoir, at the junction of Bartlett Road (not signposted). The area under observation is that area bounded by Olinda Creek Road to the north, by Bartlett Road to the west, and the 850-foot contour (approximate) to the south, to a depth of approximately 100 yards from the frontage along Bartlett Road.

This area was stated by Mr. McHugh of the Forestry Office at Kallista to be scheduled for control burning during the latter part of 1971, having been last burnt in 1962, although the appearance of the flora for the first 100 feet or so from the Olinda Creek Road frontage suggests that this strip may have been burnt more recently. In this section an abundance of Acacia myrtifolia and Pimelea flava seedlings up to about 18 months old is accompanied by a notable increase in monocots such as Glyceria dives, Poa sp., and Tetrarrhena regrowth.

SWEEP-NET COLLECTING:
Sweep-nets should be used as close to the ground as foliage permits. Approximate temperature and time of day should be noted.
Date and prevailing weather conditions must be recorded.
All insects which can be retained in a net must be retained.
All collections be confined to the perimeter of a defined and marked quadrate, and not made from the central area.
The defined quadrate should be not less than the equivalent of a 50 foot square.
Sweep-net is a relatively unreliable method of sampling, and the above conditions are to be related to those of succeeding seasons, possibly by other collectors.

UV-LAMP COLLECTION:
Type and wattage of lamp to be recorded:
Temperature and prevailing weather conditions to be recorded.
Time of commencement of collection to be recorded.
Date must be recorded.
Collections must be limited to one hour from commencement.
Collections must be confined to the central area of the quadrate and the lamp unshielded from any direction.
Lamps must not be moved during collection.
All insects coming to the lamp during this period must be retained.
UV-lamp collections can produce very accurate results, and if care is taken to collect each insect, valuable data can be obtained.

INCANDESCENT LAMP COLLECTION:
As fo UV, above? with special attention to prevention of fire.

SETTING-UP LAMPS:
Lamps shall be set up as stated, in the central area of the marked quadrate.On a cleared portion of ground, a five-foot square of white material should be laid down, with the lamp centrally situated. Only those insects which come within the perimeter of the base cloth should be collected. Insects should be collected as they arrive in order to prevent losses to nocturnal birds and small bats &c., which are adept at obtaining an easy meal.

ICHNEUMONS:
The Ichneumons can provide valuable data on the relative abundance of larvae which themselves may never be seen, and particular care should be given to correct identification of these insects. Many can be related to some particular host, and thus provide even more detailed data.

Other species noted in the vicinity, and relative abundance are as follows: I-Isolated S-Scattered O-Occasional L-Local F-Frequent D-Dominant.

Acacia dealbata	O	(D nearby, lower)
melanoxylon, seedlings	LO	lower area
myrtifolia	F	(D nearby, lower)
verticillata	OS	
Acrotriche depressa	O	
Billardiera scandens	O	
Cassinia spp. (2)	O	
Cassytha (? glabella)	O	
Comesperma volubile	O	
Correa reflexa	F	
Cyathea australia	I	
Dianella	O	Along track
Eucalyptus obliqua	D	Upper slope
radiata (?)	D	Lower slope
Gahnia sieberiana	O	Lower slope
Glyceria dives (?)	O	Flat ground
Goodenia lanata	O	Along track
ovata	F	
Haloragis tetragyna	O	Along track
Lepidosperma (2 species)	F	Along track
Lomandra (Xerotes) longifolia	O	" "
filiformis (?)	LF	" "
Olearia lirata	O	
Pimelea flava	F	
ligustrina	O	
Platylobium obtusangulum	F	Along track
Poa australis agg.	S	Lower track
Prostanthera lasianthos	O	
Senecio sp.	O	Along track
Stackhousia monogyna	O	" " lower area.
Stylidium graminifolium	O-F	" "
Taraxacum officinale &c.	F	" "
Tetratheca	O-F	" "
Tieghomopanax	LF	
Thelemitra, probably aristata	2I	" "
Viola hederacea	F	" "

A Suggested Schedule for Insect Population Sampling.

Area marked 'A' is the primary study area.
Area marked 'B' which may have been burned subsequent to the 1962 fire, is of secondary interest, and collections from this area must be stored separately fromthose from area 'A'.

The general appearance of the major portion of the area under observation is that of an impenetrable mass of Spyridium and Pultenaea scabra up to a height of some eight feet, and heavily inter-grown with Tetrarrhena. In actual fact, the Pultenaea proved to be less numerous than expected, but relatively large. Although not represented in either of the quadrate samples, it would contribute substantially to available fuel levels, and is a significant foodplant of numerous insects.

Owing to lack of time to carry out a number of samplings, two quadrate samples only were obtained, and notes made of other species observed, and their relative frequencies, details of which are set out below. No collection of insects was attempted, but a rough schedule has been formulated to produce relatively consistent conditions for collection, and accuracy as far as possible devoid of any human error factor.

The first of two, three foot quadrate-samples was taken some 20 yards down a very faint track off Bartlett Road some 180 yards from its junction with Olinda Creek Road, the exact position being on the south side of this track, and some twelve feet north-east of a very large and conspicuous Messmate, broken at the top and heavily forked. (Tree to be marked)

This sample comprises:

Pteris (green and moribund stems)	5
Acacia myrtifolia (dead)	8
Epacris impressa	6
Lomandra (sp. indet)	3
Comesperma volubile (Bredemeyra) (stems)	3
Spyridium vexilliferum	42
Tetrarrhena juncea (stems at ground lev.)	100

Conspicuously ABSENTfrom sample: Pultenaea scabra & Correa reflexa.

The second sample was obtained lower on the slope, and some 12 feet north-east of a second large Messmate with a broken top, access being via a rather better-defined track and thence through and over several yards of dense Spyridium-Pultenaea-Tetrarrhena growth. (tree to be marked)

Sample 2 comprises:

Lomatia ilicifolia (3 seedlings, 3 stems)	6
Acacia myrtifolia (6 Dead, 1 moribund)	7
Comesperma volubile	1
Epacris impressa	6
Pimelea flava (moribund)	1
Tetrarrhena juncea (stems at ground level)	51

Conspicuously ABSENT from sample 2: Spyridium & Pultenaea.

A TRIP TO HATTAH LAKES NATIONAL PARK
29 August to 11 September 1971
By D.E.A. Morton

Since the Murray River flooding in 1970 the system of lakes in the Kulkyne Forest area has been filled and this has attracted a great deal of bird-life to that part of the reserve. The Lakes also provide non-drinking water for campers and visitors to the National Park, the camping and picnic area of which is on the shores of Lake Hattah itself. There is a large, flat area, lined with trees, for those who prefer shade, and plenty of dead wood for fires. There are toilets too, and although they are merely built over a pit they have the unusual combination of toilet seats and doors which can even be locked! Drinking water can be taken from a large rainwater tank up at the Ranger's house, but may well be scarce at times.

The National Park itself consists almost entirely of Mallee and is roughly wedge-shaped some fifteen miles long and five miles wide bordered on the west by the Calder Highway and some forty miles south of Mildura. The Kulkyne Forest, a rather degenerate mixture of open grassland and wooded strips, consisting of 80,000 acres, lies to the north of the Park. Some of the land near the Lakes is still being farmed, and there is a certain amount of evidence of previous settlement. Apart from the clearing of bush that this has meant, out of 566 different species of vegetation, listed from the Park, 102 are introduced and are flourishing, particularly on cleared ground. Pigs have gone wild and are extremely destructive and the wild cat is an especial threat to birds and small marsupials. Rabbits, I gather from the Ranger, have been exterminated, but with them has gone the Wedge Tailed Eagle. Few forms of larger wild-life were seen by us, although we were not particularly looking: a few kangaroos in the Kulkyne Forest, a Dragon, but no Emus, except the incomplete skeleton of one. The birds, as mentioned above, were extremely numerous and varied, and 197 species have been recorded from the Park.

I was mainly after butterflies and especially after a new race of *Motas--ingha atralba*, which I had heard about from the area. This Skipper was thought to have only an autumn brood, but while I was there the Ranger, while showing me the foodplant, *Gahnia lanigera*, immediately discovered a pupa in its most distinctive shelter, low down on the plant and giving a definate twist to the few reed-like leaves it needs. This establishes for certain that this race of *atralba* has a spring brood as do its relatives further west. The Ranger, Mr.N.H.E. McDonald, to whom I am very much indebted for all his help, tells me that Mr. Couchman has described this race of *atralba* which is I believe going to be called *berooka* after the Berook dune system on which the foodplant grows. The Ranger kindly pointed out an area of Mallee outside the National Park where I was able to obtain a few pupae. This area is between the highway and the railway-line and extends from the station of Hattah down to the T.V. aerial

there. I found the pupae tended to be on the tops of the ridges and on the smaller clumps od *Gahnia*. They were not plentiful, and the Ranger thinks they are still recovering from the 1967-8 drought which all but wiped out the food-plant. I also found one large larva which pupated successfully. The only other trace of the butterfly I could find were several small larvae. This could suggest a yearly life-cycle, but I am not competent to say anything more. So far the only things to have emerged from my pupae has been a parasitic wasp! The type specimens are in the Park collection, kept by Mr. McDonald.

Searching for *atralba* pupae kept me bent double in a sort of skipper searcher's stoop, and I may have missed many interesting insects in consequence. I did, however, notice some *Catopsilia pyranthe crokera* both hibernating on Mr. McDonald's *Cotoneaster* bushes and others flying about on warmer days. They were all very fine specimens which might suggest that they breed in the Park or nearby. Dodder is common in the Park and the area around, covered in blossom at the moment and with a strange but delightful smell. I was lucky enough to take a fine range of *Erina hyacinthina simplexa* which show a marked variation in colour. I also found empty pupal cases under the bark of Mallee infested by Dodder. Driving back to Melbourne I noticed a lot of Dodder along the sides of the roads and I think it might be interesting to take specimens from all along the Calder Highway to establish any constant colour changes that might occur. I also spent hours looking for pupae of *Ogyris hewitsoni meridionalis* on the Buloke and Belar in the Forest. Plenty of that superbly camouflaged mistletoe was there and hordes of ants, but the crevices and crannies into which the larvae can crawl are limitless. I terrified myself several times by disturbing enormous spiders, and got the crick out of my back but removed all the skin off my finger-ends, but all I found were one larva that refuses to pupate or eat, one parasitized pupa, several empty pupa cases, and two pupae which have not yet emerged.

Although the weather was cool and blustery we enjoyed our stay and I found the Park a fascinating place. Whatever our own views on the ban on collecting within National Parks might be, however, I cannot understand the philosophy that allows commercial bee-keepers to operate within the Park itself and allows the C.R.B. to make gravel pits (one I noticed must be this year's) within it as well. Don't tell anyone but there's gypsum there too, presumably in non-commercial quantities, however or.....well, what's a National Park, anyway, if there's an easy buck to be made!

LIST OF BUTTERFLIES RECORDED FROM HATTAH LAKES NATIONAL PARK
Supplied by Ranger, Mr.N.H.E. McDonald.

Motasingha atralba berooka
Papilio anactus
P. demoleus sthenelus
Catopsilia pyranthe crokera
Eurema smilax
Delias aganippe
Anapheis java teutonia
Pieris rapae

BUTTERFLY LIST FROM HATTAH LAKES NATIONAL PARK (continued)

Danaus plexippus
D. chrysippus petalia
Heteronympha merope merope
Vanessa kershawi
V. itea
Precis villida calybe
Ogyris genoveva araxes
O. olane olane
O. hewitsoni meridionalis
Nacaduba biocellata biocellata
Lampides boeticus
Neolucia agricola agricola
N. serpentata serpentata
Zizina otis labradus
Zizeeria knysa karsandra
Erina hyacinthina simplexa
Cyprotus cyprotus
Microscena heathi heathi

The Australian Entomological Society is preparing a "Directory of Australian Entomology" for publication in time for the 14th. International Congress of Entomology next year. The Directory will include an alphabetical list of all known Australian entomologists, their adresses and interests.

If you wish your name to be included on this list, please complete the following:-

NAME:

ADRESS:

INTEREST: (General, Family, Species, etc.)

Please send or hand this information to the Secretary as soon as possible.

(Miss. S. Beattie)

THE ENTOMOLOGICAL SOCIETY OF VICTORIA CONSTITUTION

1. NAME *The name of the Society shall be "The Entomological Society of Victoria".*

2. OBJECT *(a) To stimulate the scientific study and discussion of entomology in all its aspects.*

   (b) To gather, preserve and disseminate knowledge of all Australian species of insects.

   (c) To compile and maintain a list of all known species of Victorian insects.

   (d) To bring together in a social and scientific atmosphere all persons interested in entomology.

3. MEMBERSHIP *Shall consist of:*

   (a) Ordinary Members
   (b) Junior Members
   (c) Student Members
   (d) Country or Associate Members
   (e) Honorary Members
   (f) Exchange Members
   (g) Joint Members

   (a) Ordinary Members are persons over the age of 21 years paying an annual subscription to the Society.

   (b) Junior Members are persons under the age of 21 years, paying an annual subscription to the Society.

   (c) Student Members are persons over the age of 21 years, and who are bone fide full-time students of a college or university, paying an annual subscription to the Society.

   (d) Country or Associate Members are persons who, through force of circumstance, are unable to attend Meetings of the Society regularly, paying subscription to the Society.

   (e) Honorary Members are those persons duly elected by the Society, who have rendered or are rendering, distinguished service to the Society, or to the cause of Entomology. These persons are to be entitled the same priviledges as Ordinary, Junior, Student or Country Members without subscribing an annual fee to the Society.

   Honorary members shall be approved by the Council and elected by a two-thirds majority at an Annual or Ordinary meeting. The number of Honorary Members at any one time shall not exceed 10% of the total membership of the Society.

(f) *Exchange Members shall be only those Clubs or Affiliated Societies interested in Entomology, and who send their own magazine to the Society in exchange for the "Victorian Entomologist".*

(g) *Joint Membership may be granted in the case of more than one member of a family being members of the Society. Under this sub clause, the Council may grant a fee concession to the second and successive members of a family.*

4. NOMINATION AND ELECTION

Applicants for membership shall be nominated and seconded by 2 financial members at any ordinary or annual general meeting, and shall be elected at the succeeding meeting. Election shall be by vote taken on a show of hands, or by ballot if such is demanded by at least 3 financial members of the Society. The nominee shall be declared elected if a majority in favour is obtained.

5. SUBSCRIPTIONS

All Annual subscriptions shall be fixed by the Council of the Society.

All financial, honorary and exchange members shall receive the Society's publication, "The Victorian Entomologist".

All subscriptions shall be payable in advance at the Annual General Meeting. The financial year shall terminate on 31st Dec.

6. TERMINATION OF MEMBERSHIP

Membership of the Society will be deemed to have terminated if any member tenders a written resignation to the Secretary, or if any member is not financial after 90 days. Renomination and re-election will be required of persons who resign and wish to rejoin the Society. Persons who are unfinancial for 2 consecutive years may renew their membership by payment of all subscriptions which are in arrears.

7. THE COUNCIL

(a) *The management of the Society shall be vested in the Council.*

(b) *The Council shall compose of the President, Vice President, Immediate Past-President, Honorary Secretary, Honorary Treasurer, News Editor and 8 other Councillors.*

(c) *The Council shall meet bi-monthly, or as often as may be practicable and desirable.*

(d) *The Council shall have the power to make By-Laws with respect to the Publication of the "Victorian Entomologist", or any other matters consistent with the objects of the Society.*

8. ELECTION OF THE COUNCIL

(a) *The Council members shall be appointed at the Annual General Meeting of the Society.*

(b) *Nominations, in writing, and signed by the proposer, seconder nominee, must be in the hands of the Secretary 7 days prior to the Annual meeting.*

(c) *If there are insufficient written nominations, then nominations may be accepted at the Annual General meeting.*

(d) *If there are vacancies on the Council, occurring at the close of the Annual General meeting, or for any other reason during the Societies year, then these vacancies may be filled by invitation.*

(e) *Office-bearers may be dismissed from Office, by a 75% majority vote, at a meeting called specially for the purpose, for which 7 days notice has been given.*

9. OFFICE-BEARERS

The PRESIDENT shall:

(a) *Chair all meetings of the General and Committee Meetings.*

The VICE-PRESIDENT shall:

(a) *Deputize in the absence of the President.*

The SECRETARY shall:

(a) *Keep records of the names and addresses of all members of the Society.*

(b) *Make the necessary arrangements for meetings, and give due notice of all meetings.*

(c) *Keep Minutes of the proceedings of Council and General meetings.*

(d) *Transmit to the News Editor any material for publication in the "Victorian Entomologist".*

(e) *Notify members concerning their subscriptions.*

(f) *Generally transact the routine business of the Society.*

The TREASURER shall:

(a) *Collect and receive all monies on behalf of the Society and deposit these without any deduction whatsoever in a bank approved by the Executive.*

(b) *Maintain records of all financial transactions.*

(c) Keep a record of members indicating their current financial status.

(d) Present a cash statement at each General and Committee meeting.

(e) Make payments of all accounts approved for payment; such payment being make by cheque, and signed by either the Treasurer or the President.

(f) Set aside from the subscription of each member a sum equivalent to $1.00 per financial member per annum of the total as a subscription to the "Victorian Entomologist", and he shall cause these sums to be separately accounted in the yearly balance sheet and to be duly audited.

The NEWS EDITOR shall:

(a) Prepare and publish the "Victorian Entomologist" every second month of the year, prior to the General meeting.

(b) Ensure that the cost of publication is kept within any limitations set by the Council.

(c) Furnish the Council with a statement of expenditure of each issue of the Newsletter.

(d) Arrange for the distribution of the "Victorian Entomologist" to all members entitled to receive it.

10. MEETINGS An Ordinary General meeting shall be held on the second last Friday of each second month, and/or at such other times as shall be deemed advisable by the Council. The annual general meeting shall be held in February of each year.

At least 7 days notice of meetings is to be given to members by the Secretary.

11. QUORUM At Ordinary and Annual meetings, 15 members, and at Council meetings, 5 members shall form a quorum for the transacting of any business.

12. ALTERATION OF CONSTITUTION

The foregoing shall not be altered, suspended or added to except at an annual general meeting or at an Extraordinary meeting called for such purpose by the Executive, and then only when written notice of the amendment has been given to the Secretary at least one month prior to the meeting at which the proposed amendment is to be made.

13. DISSOLUTION

The Society shall not be dissolved or its name changed, without the consent of ¾ of the members present at an Extraordinary General meeting of members called for that purpose.

The proceeds arising from the winding up of the Society, after all costs and debts have been paid, shall be distributed amongst such charitable and/or scientific institutions, and in such amounts, as the Council in their absolute discretion, shall decide. No member shall be entitled to share in, or receive any benefit, therefrom.

BY-LAW:

There shall be a Society newsletter entitled "The Victorian Entomologist", which shall be issued at bi-monthly intervals. It shall be forwarded to all financial and honorary members, and associations with which the Society has exchange arrangements. Not more than 25% of all copies issued each month shall be despatched to non-members of the Society.

An amount of $1.00 per annum shall be included in the annual subscriptions of each members.

This $1.00 per annum shall be set apart for the newsletter, and be separately accounted for in the Annual Balance Sheet, and be duly audited.

Passed at a meeting held on 22.10.71. at Conference Room, Nat. Museum Melbourne.

Chas. McCubbin
Hon. President

Miss S. Beattie
Hon. Secretary.

Date: 22.10.71.

VICTORIAN ENTOMOLOGIST

The Journal of
THE ENTOMOLOGICAL SOCIETY OF VICTORIA

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FEB.1972.

Price 20¢

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(a) To stimulate the scientific study and discussion of entomology in all its aspects.
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ANNUAL SUBSCRIPTIONS

Payable in advance and due at the annual general meeting.

Ordinary members	$3.00.
Country or Associate members	$1.00.
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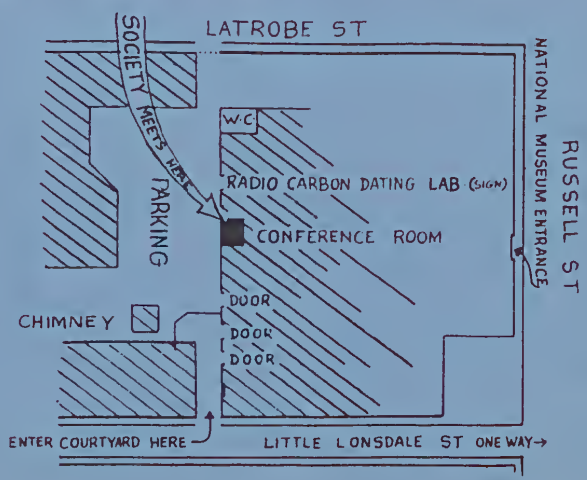

February, 1972 "The Victorian Entomologist"

V.E.S ACTIVITIES

OFFICE BEARERS

President: Mr. Chas. McCubbin, 6 Manniche Ave., Box Hill Nth. (89 9171)

Vice President: Mr David Holmes.

Immediate Past-President: Mr. Peter Kelly.

Hon. Secretary: Miss Sue Beattie, 2 Clyde St., Glen Iris, 3146 (50 5263)

Hon. Editor: Mr. Ray Besserdin, 35 Quinn St., Heidelberg, 3084

Hon. Treasurer: Mr. Bob Condon, 96 Shannon St., Box Hill Nth. 3129

Committee: Mr. Bob Thompson, Mr. Arthur Hall, Mr. Fred Hallgarten, Miss Jenny Forse, Mr. Zoo. LeSouef.

Editorial Committee: Mr. Chas. McCubbin, Miss S. Beattie. Mr. R. Besserdin Mr. P. Williams, Mr. A. Bishop, Mr. J. Wainer.

The "Victorian Entomologist" incorporates "Wings and Stings".

COMING EVENTS:

Friday, Febuary 18, 1972

Annual General Meeting, Member's night. (N.B. Election of Office Bearers.)

MEETING DATES FOR 1972:

April 21, 1972
June 16, 1972 (Third Friday of the month)
August 18, 1972
October 20, 1972
December 15, 1972 (Third Friday of the month)

REPORTS AND NOTICES:

General Meeting, Friday, November 19th., 1971

The President chaired the Meeting at which 30 members and friends attended. Apologies were received from Mr. N. Quick and Mr.A.Haffenden.

As this meeting was the last for the year, a Member's Night was held. Exhibits shown:

Mr. R. Besserdin: Hymenoptera.
Mr.F. Hallgarten: A selection of Longicorns from Australia.
Mr.D. Crosby: Parasitic Flies and Wasps.
Mr.R. Manskie: Butterflies from Nhill and Big Desert (Victoria), and a selection of slides of Orchids and Beetles.

NEW MEMBERS: We wish to welcome to the Society the following new members:
Mr. Malcolm Moss, P.O. Box 2807AA, Melbourne.(Interest, Ants)
Nigel and Randal Delaney, 73 Park Road, Cheltenham
Miss Susan Meier, 73 Grey Street, East Melbourne
Miss L. Barraclough. Flat 4/ 104 Riversdale Road, Hawthorn.
(The Secretary wishes to apologize for previously ommitting Miss Meier and Miss Barraclough from the Member's List last year.

CORRESPONDANCE: Correspondance was received from:

(1) Alison Cook, Box 106, Numurkah, Vic., dated 17.11-71, requesting details of joining the Society.
(2) Journal of "The Australian Entomological Society", Vol.10,No.4 Dec.1971.
(3) News Bulletin of "The Australian Entomological Society",Vol.7 Part 4, Nov. 1971.
(4) Circular 219 from "The Entomological Society of Australia(N.S.W) Dec. 1971.
(5) Fumio Miyasaka. Sitamiti Nisindoo Hp. Ueda-c. Nagano-p.JAPAN Dated 13.10.1971. Mr. Miyasaka is a dealer in Butterflies, and wishes an exchange or to receive orders at 40% discount. Price list included.
(6) Journal of "The Entomological Society Of Australia" Vol.7,1971
(7) T.I.E.G.(Teen International Entomology Group) newsletter. Vol.6, No.1. and Membership List for January 1971. Editor - Miss Colleen Seeley 47 Woodside Avenue, Oneonta, N.Y., U.S.A. 13820
(8) E.W.Classey Book Catalogue. 353 Harworth Road, Hampton, Middlesex, ENGLAND.

THE NEWSLETTER:

(1) If you wish your name to be included on the Australian Entomological Name List which was printed in the last issue of this Newsletter, please return the information by the end of February.

(2) Only one Newsletter may be sent to members. Any extra copies shall cost 20c. each.

(3) When submitting any articles to the Journal, it is essential that where a scientific name is given, a common name must also be included.

(4) Several people shall be deleted from the Member's List if they do not becomefinancial. In accordance with the G.P.O. postal regulations, no member shall receive a Newsletter if they fail to pay their subscription this month, and shall cease to become a member 90 days after the Annual General Meeting.

(5) A Member's List is being prepared and will be printed in a future Newsletter.

****

Mr. A. Nebois of the Melbourne Museum spoke on a programme being conducted in Europe which is to be undertaken in Australia. An area (e.g. Victoria) would be divided into 10 km. grids, or 10 minute geographical grids, and all entomological data would be studied. This programme would involve the co-operation of both amateur and professional entomologists, and shall be arranged at a later date.

****

NEW PUBLICATIONS:

"Jamaica And Its Butterflies"
F.Martin Brown and Bernard Heineman. Available from E.W.Classey.
£16.50(U.K.)

"Butterflies of New Zealand"
W.B.R.Laidlaw 1970. Available from E.W.Classey.
£1.40(U.K.)

"Butterflies Of The Australian Region"
Bernard D'Abrera. Published by Lansdowne Press.
$29.50

****

STATEMENT OF RECEIPTS AND PAYMENTS FOR THE YEAR ENDING 31st. DECEMBER. 1971.

Credit balance brought forward.	$20.47
Add receipts.	
Interest received during 1970.	.91
Interest received during 1971.	.51
Subscriptions received during 1971.	$98.50
Donations.	.30
	$120.69

Less expenditure

Department of Lands (Rent)	$ 8.40
Secretaries expenses (Printing, postage, telephone, sundries.	$32.92
Australian Entomological Society subscription.	$10.00
Cheque book and stamps.	$ 2.25
Library Council rent.	$20.00
Printing, postage of "Wings and Stings"	$25.85
Credit balance carried forward.	$21.27
	$120.69

AUDITOR'S REPORT:

To the Members of the Society,

I have examined the above Statement of Cash Receipts and Payments for the year ending 31st December, 1971, and have obtained all the information that I have required.

In my opinion the above Statement summarizes fairly the financial transactions of the Society.

H.R.COLLYER A.C.A.

Description of the larval and pupal stages of
Swainson, the 'Small Copper'.
(Lepidoptera, family Lycaenidae).

Foodplant: The diminutive matted form of Oxalis corniculata.
Locality: Djerriwarrh Creek Gorge, near Bacchus' Marsh, Vic.
Date: January 3, 1972. Larvae, pupae and imagines present.

Larva: Sub-cylindrical, tapering abruptly at either end. Posterior segments markedly flattened. Rather bristly, the setae longer, darker and more numerous towards the extremities, sparse on the dorsal surface. A pair of yellowish extensile organs laterally situated on the flattened dorsal area of the twelfth segment.

Grey-green above, a broad and prominent stripe down either side, violet-black edged white and narrowly outlined dark brown. Frontal shield with a conspicuous almost circular marking, violet-black edged white, and bisected dorsally. Two faint dorsal lines, dark brown, close together and confluent between segments. Under-surface bright green. 16-18 mm x 4-5 mm.

Larvae are attended by *Iridomyrmex(species indeterminate)*, a common garden species within suburbia, and feed openly during the day, often towards noon, the ants running all over them, biting at the larvae but apparently quite unheeded. When not feeding, larvae rest an inch or so below the surface in ant-tunnels close to the foodplant. Pupation takes place in the same situation, or in ant-galleries under nearby logs, stones or even dry cow-manure.

Pupa: Smooth, and without conspicuous markings. Wing-cases prominent. Abdominal section with a rather inflated appearance, slightly constricted between segments, and dimpled above each spiracle. Head, thorax and abdomen olive to yellow-green, wing cases yellow. Apparently lies loose within the pupal site.
10-11 mm x 3.5 -4 mm. (Male pupae slightly smaller.)

W.N.B.Quick.

January, 1972.
Publication rights reserved.

Some notes on the life-history of
Pseudalmenus myrsilus zephyrus Waterhouse & Lyell 1914
(Lepidoptera, family Lycaenidae.)
The "Victorian Hairstreak".

By W.N.B. Quick.

This butterfly was previously referred to as P. chlorinda zephyrus, by which name it was formerly known.

In the course of preparing photographic records of the life-histories of some Australian butterflies, some difficulty was experienced in locating pupae of the Victorian Hairstreak, Pseudalmenus myrsilus zephyrus.

In areas such as Kallista, Ferntree Gully, Gisborne, Healesville and Warragul, where the butterfly has been taken in past seasons, no trace could be found. The environmental conditions appeared favourable, and in each case there seemed little reason why the butterfly should not be present, even in reduced numbers, for the species is prone to periods of decline and occasional population explosions. Certainly, I had postponed my search until the more convenient winter months, when little else could be accomplished, and consequently did not have the full activity of the attendant ant, Iridomyrex foetans, to guide me.

Subsequently, at a meeting of the E.S.V., Mr. Ray Manskie mentioned that he had frequently taken pupae of the butterfly through the Acheron Valley early in October. He, like Couchman, had located them under bark of Eucalyptus viminalis, close to ant-trails, and at a distance of up to 10 metres from the nearest food-tree, in this case Acacia melanoxylon. He had never found them actually on the Acacia itself. I have, on one occasion, found it on Acacia dealbata at Kallista.

Ray Manskey's information was followed up several days later near the Cathedral Range, working back towards Buxton. Very few of the Manna Gums examined had any trace of the ant even nearby, and on these trees I failed to locate any indication of presence of the butterfly. Charles McCubbin, however, who was camped near the Cathedrals at the time, reported that he had found four pupae under the bark of the first Eucalyptus he had searched. By this time. I was seriously beginning to doubt my own competance and eyesight, and elected to concentrate on a much smaller area, meticulously examining each tree, Acacias included, in the little time remaining. The area selected was on the fringe of an open, well-watered section of forest composed mainly of peppermints, Eucalyptus dives and E. radiata, Manna Gum, and Yellow Box, E.melliodora, with Acacia melanoxylon as a frequent associate, interspersed with A.dealbata.

The first tree searched, as it happened, was in fact a Blackwood, in the hollow trunk of which was found a substantial nest of Iridomyrmex foetans. In secondary cracks, and under bark, but not attended by ants, I located three empty pupal shells and two pupae. No further pupae were located on this tree, for although they may well have been present in the hollows, the inevitable damage to the tree while locating them seemed unwarranted. Nor were any located on nearby Eucalyptus, which, however were of large size, with loose bark continuing far beyond normal reach.

Search of the second group of blackwoods revealed no sign whatever of any ants, but some were noticed near the base of a moderately large manna gum some twelve feet from the nearest blackwood, and a single pupa, unattended by ants, was located under loose bark some eight feet from the ground. Still furtheraway, and roughly equidistant from several large blackwoods, several ants were observed wandering on the trunk of a large Eucalyptus dives, and a single pupa was found in a deep fissure of the fibrous bark, some 6 feet (2 metres) from the ground, and again unattended by ants. A group of four pupae was found on a nearby E.viminalis in a similar situation. In the last of the daylight, Charles McCubbin and I found two additional pupae on Eucalyptus radiata near a group of blackwoods. A few roving ants were noticed nearby.

My notes, to this point, were forwarded to Mr. Gooding for comment, for his has been the rare privelege of having the species 'right in his own backyard' for more years than I can remember. In his letter of reply, and from which I quote, he expresses the opinion:

" The little colonies that you and Charles (McCubbin) are finding, whereby you are getting 2, 3, or 4 pupae, are only 'breakaways' from the main colony, where fertile females on a mating flight have flown a considerable distance, and and not returned to the host tree. The edge of forest, or small clearings with a good regrowth, are good places to search, but not the forest generally speaking. I do not hold to the idea that pupae are found generally under the bark of Eucalyptus."

It would seem that larvae are influenced by the ants in selection of a site for pupation, and have a tendency to seek a site near the centre of the ants activities at the time of pupation. If the ants have a nest within the host tree itself, most larvae will pupate under such cover as exists on the tree itself, (Gooding reports having ' once found a piece of blackwood bark in a crevice of a blackwood tree that yielded 58 pupae'). A few follow the ants' work trail to nearby trees where the ants are seasonally tending scale-insects or a honey-flow, and pupate on these trees which will later be abandoned by the ants as forage dictates. Such may have been some of the small groups found close to blackwoods.

If, on the other hand, ants are merely tending larvae on the foodplant, but have their nest elsewhere, larvae, when ready to pupate, will leave the host tree and follow the ants back towards the centre of activity on whatever tree they may be currently working, and pupate there. Consequently, at this time of the year (mid-August) pupae may well be found on trees which appear completely unattended by ants. Early summer may doubtless produce a very different picture as the ants return to a repetition of their anual forage cycle. This pattern of behaviour of the larvae is in accord with Mr. Goodings own observations. He adds that he has the species from the additional localities of Yinnar, Boolarra, Hazelwood, and that the specimens from Warragul are very much darker than those from Moe.

For those not familiar with the species, it seems largely confined to

host-trees close to water, although for no obvious reason. Gooding suggests that trees with dead and decaying tops will harbour the largest colonies. Iridomyrmex foetans is dark grey, variable in size but usually 6-7mm in length, with a shiny, heart-shaped abdomen. Blowing on the ants sends them into a frenzy of excitementas they race around to investigate the source of the disturbance, abdomens held high in the air and omitting a strong 'anty' smell.

Following Mr. Gooding's letter, Charles McCubbin and I investigated a further area near St.Fillans, where a much larger colony was located, the ants' nest being in a blackwood, and the pupae in a cavity at the base of a Eucalyptus ovata, Swamp Gum growing hard against it. A single pupa was found on a small blackwood some distance away.

December 1971.

Subsequent to the foregoing notes being compiled, it has been verified that Iridomyrmex foetans does in fact seasonally rotate its forage areas, and are at this time of the year, (January), again working trees on which butterfly pupae but no ants were located earlier in the year.

On one such tree, Eucalyptue viminalis, a piece of bark six feet above ground level was removed, exposing several larvae and some hundreds of ants, in addition to the remains of at least one generation of pupae. One of the larvae was already preparing to pupate, but the others little more than half-grown, and obviously still feeding. For each meal they must therefore have made a round trip from cover to the nearest Acacia foliage, and return, of at least 65 feet!

W.N.B. Quick January 1972.

COMMON NAMES OF PLANTS NOT GIVEN IN TEXT:

Acacia dealbata: Silver Wattle
" melanoxylon: Blackwood
Eucalyptus dives: Blue Peppermint
" viminalis: Manna Gum

Notes on the Butterflies of Weipa, North Queensland
6 to 18 June 1969 by C.W. McCubbin.

Weipa, lies only 12 degrees below the equator and is situated on the western side of Cape York Penninsula 360 miles north west of Cairns. The low lying, flat countryside is for the most part open Eucalyptus forest with a scattering of Pandanus or Screw Pines and other trees. There are numerous rounded, white-ant mounds, often venetian red in colour, reflecting the underlying bauxite. Waist high grass grows beneath the trees in the more open forest areas, and, at the time of my visit, the yearly burn-off by grazing interests was in progress. Along the shores of the Gulf of Carpentaria and the larger esturies there are mangroves in many places, immediately behind these there are usually a few large Hibiscus and behind these again a very narrow strip of rain-forest trees. Where there is an open beach rather than mangroves, Melaleucas are the dominant trees for the first fifty yards or so above the high tide zone, beneath them grow shrubs including Alphitonias and various species of figs. Apart from the strips of rain-forest trees behind the mangroves, there are occasional patches of rather hungry and dry-looking, rain or monsoon-forest, usually these have only a few vines and no epiphytes, except for an odd orchid on a dead branch (most of these have long since been pulled down and taken away to perish under the eaves of houses). No grass worth speaking of grows under the darker canopy of these monsoon-forest patches and the ground is frequently stony. The largest patch I located was close behind the beach; about three miles long and up to half a mile wide. It contained a large variety of trees and many more vines than any of the smaller patches I had seen. I came across numerous mounds of Jungle fowl, but all had been broken open, aparently by feral pigs. The day was overcast with several short spells of fine rain, but never-the-less, this patch provided a greater number of butterfly species than any other area in which I collected while at Weipa. In one part I particularly remember the Black and White Flats (Taqiades japetus) which I frightened up in dozens as I passed, so that, whenever I looked back, the air would be everywhere punctuated with the jerky flight of these conspicuous insects, which are so prominent one moment and then disappear completely as they settle again on the undersides of leaves. The open forest grassland provided few species although the Bush Browns (Micalesis) where very abundant and in some areas the little Sulphurs (Eurema) were also common. The Black Spotted Grass-blue (Zizeeria alsulus alsulus) and the Blue Argus (Precis orithya albicincta) were also fairly numerous, the former mainly near the coast. When I arrived (6 June) Red-bodied Swallowtails (Pachioptera polydorus queenslandicus) were a common sight, flying steadily along about eight or ten feet from the ground, but at the end of my stay, when I decided I should try and take a specimen, I could not locate a single example. The Northern Jezabel was also met in open country but not commonly, I saw only about six while I was there. A rather swampy area along a creek within a few minutes walk of Weipa township was the haunt of several species of Danaid (Tigers and Crowa). They showed little activity and the Euploeas (Crows) were usually at rest on the dead twigs of Melaleucas. The great majority of specimens captured were associated with monsoon-forest or the thin strip of rain-forest trees behind the Mangroves or along the creeks.

Most of the time spent at Weipa was taken up with painting plants and impressions of the country and the actual time spent collecting amounted to two full days and three half days. I did not capture many examples of any one species, except, as in the case of Mycalesis perseus, where I tried to obtain a full range of intergrades between the wet and dry season forms.

List of Butterfly Species Collected at Weipa North Queensland
6-18 June 1969

		♀	♂
Family Nymphalidae:			
Danaus affinis affinis	Black and White Tiger	3	2
,, chrysippus petilia	Lesser Wanderer	2	1
Euploea darchia niveata	White-margined Crow	1	2
,, core corinna	Common Australian Crow	1	2
,, eichorni	Eichorn's Crow	1	2
Hypolymnas alimena lamina	Blue-banded Eggfly	2	2
,, misippus	Danaid Eggfly		1
Precis hedonia zelima	Brown Soldier		3
,, orithya albicincta	Blue Argus	1	1
,, villida calybe	Meadow Argus		1
Phaedyma shepherdi latifasciata	Common Aeroplane		1
Pantoporia venilia moorei	Cape York Aeroplane		2
Tellervo zoilus gelo	Cape York Hamadryad		1
Melanitis leda bankia	Evening Brown		1
Mycalesis terminus terminus	Orange Bush-brown		3
,, perseus perseus	Dingy Bush-brown	13	12
Ypthima arctous arctous	Dingy Ring	1	1
Hypocysta adiante adiante	Orange Ringlet	1	1
Family Lycaenidae:			
Erina erina erina	Small Dusky Blue		2
Philiris innotatus evinculis	Common Moonbeam	1	1
Danis hymetus taletum	Small Green-banded Blue	2	5
Jalmenus eichorni	Northern Imperial Blue	2	3
Euchrysops cnejus cnidus	Cupid	2	3
Anthene seltuttus affinis	Dark Ciliate Blue		2
Catochrysops panormus platissa	Forget-me-not		2
Zizeeria alsulus alsulus	Black-Spotted Grass-blue	3	1
Narathura micale amphis	Common Oakblue	3	2
,, araxes eupolis	Dull Oakblue	3	2
Hypolycaena phorbas phorbas	Common Tit	3	6
Theclinesthes probably onycha but very small			2

Two other lycaenid species (one specimen each) not yet identified.

		♀	♂
Family Pieridae			
Eurema laeta lineata	Line Grass Yellow	2	5
,, hecabe phoebus	Common Grass Yellow	5	5
Elodina perdita perdita	Northern Pearl White		4
Catopsilia scylla etesia	Orange Migrant		2
,, pomona pomona	Lemon Migrant		1
Appias paulina ega	Common Albatross	1	
Cepora perimale scyllara	Australian Gull		1

Delias argenthona argenthona, Northern Jezabel sighted on the wing.

Family Papilionidae			
Papilio aegeus aegeus	Orchard Butterfly		1

In addition to P.aegeus, P.ulysses joesa, Ulysses Butterfly; Cressida cressida cressida, Big Greasy and Pachlioptera polydorus queenslandicus were also sighted in the area.

Family Hesperiidae			
Tagiades japetus janetta	Black and White Flat	3	3
Hasora chromus chromus	Common Banded Awl		1
Cephrenes trichopepla	Yellow Palmdart	1	
Pelopidas lyelli lyelli	Lyell's Swift		1
Telicota species undetermined			1

VICTORIAN ENTOMOLOGIST

The Journal of
THE ENTOMOLOGICAL SOCIETY OF VICTORIA

VOL. 2: NO. 2
APRIL 1972

Price 20c

THE ENTOMOLOGICAL SOCIETY VICTORIA

OBJECTS

(a) To stimulate the scientific study and discussion of entomology in all its aspects.
(b) To gather, preserve and disseminate knowledge of Australian species of insects.
(c) To compile a list of known species of Victorian insects.
(d) To bring together in a social and scientific atmosphere all persons interested in entomology.

ANNUAL SUBSCRIPTIONS

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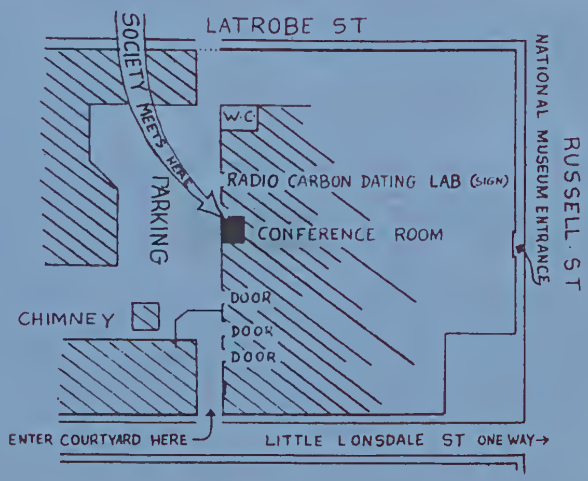

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V.E.S. ACTIVITIES.

OFFICE BEARERS FOR 1972.

President: Mr. C. McCubbin, 6 Manniche Ave., Box Hill Nth. (89 9171)

Vice President: Mr. A. Morton

Hon. Secretary: Miss. S. Beattie, 2 Clyde St., Glen Iris, 3146 (50 5263)

Hon Editor: Mr. R. Besserdin, 35 Quinn St., Heidelberg, 3084. (459 3176)

Hon. Treasurer: Mr. B. Condon, 96 Shannon St., Box Hill Nth., 3129.

Immediate Past-President: Mr. P. Kelly.

Committee: Mr. A. Hall, Mr. F. Hallgarten, Mr. J. Hutchinson, Mr. J. LeSouef, Mr. B. Thompson.

Editorial Committee: Miss. S. Beattie, Mr. R. Besserdin, Mr. A. Bishop, Mr. C. McCubbin, Mr. J. Wainer, Mr. P. Williams.

The "Victorian Entomologist" encorporates "Wings and Stings"

The statements and opinions expressed in this Journal are the views of the respective authors, and not necessarily those of the Society.

COMING EVENTS:

Friday, April 21, 1972

General Meeting, "Butterfly Food Plants" Speaker Mr. Nigel Quick.

Sunday, April 23, 1972

Excursion. Yellowdindi/Murrindindi area. (Weather permitting)

MEETING DATES FOR 1972:

June 16, 1972 (Third Friday of the month)
"Aquatic Insects" Speaker Mr.P.Genery.

August 18, 1972

October 20, 1972

December 15, 1972 (Third Friday of the month)

REPORTS AND NOTICES:

General Meeting, Friday, February 18th., 1972. The President chaired the meeting at which 34 members and friends attended. Apologies were received from Mr. A. Hall, Mr. T. Morton, Miss J. Forse, Mr. G. Burns, Mr. J. Barnes and Mr. D. Crosby.

The Minutes of the previous meeting were read and confirmed.

NEW MEMBERS: We wish to welcome the following new members:

1. Mr. Peter Lillywhite, 9 White St, Mt. Waverley. 3149.
   Interest: butterflies.
2. Mr. D. Black, 3 Eyre Court, Lower Templestowe. 3107.
3. Victorian Plant Research Institute, Swan St, Burnley. 3121.

CORRESPONDENCE: was received from

1. Mr. Jim Tuttle, 227 Theadore, Monroe. MICH. 48161. U.S.A. who is interested in locating serious collectors who rear *Saturniidae*.
2. Mr. Kaoru Sakakibara, Hanazona Enzyoji-cho. 12-9 Ukyo, KYOTO 616 JAPAN who is a 17 year old student wishing to exchange Australian butterflies for those of Japan.
3. Mr. Thor. Steinar Jensen, Kirkeveien125, 1370 ASKER -NORWAY wishes to exchange Norwegian butterflies for Australian butterflies, moths and beetles.
4. Circular of the Entomological Soc. of Australia, March '72 No. 221.
5. Circular requesting early enrolement of local entomologists to the 14th International Congress of Entomology to be held in Canberra August 22-30, 1972. Refer enrolements to the Secretary, Mr. C. Smithers, Australian Museum, College St, Sydney. 2000.
6. Constitution, By-Laws, Members List of the Australian Entom. Soc. Received 7.3.72.
7. State and National Libraries requesting Victorian Entomologist.

ELECTION OF OFFICE BEARERS:

All Office Bearers were returned to office. With the retirement of Mr. D. Holmes as Vice-President, his office was filled by Mr.A.Morton - preposed by C. Mc.Cubbin, seconded by Z. LeSouef, and with the retirement of Miss J. Forse from the Committee, her position was filled by Mr. J. Hutchinson, proposed by Mr. R. Besserdin seconded by Mr.N.Quick. Mr. LeSouef wished Office Bearers every success for their coming term of office.

THE NEWSLETTER:

The format of articles for the Newsletter was discussed and it was proposed that a Contents page appear with each Journal, with an Index at the end of the Volume.

Mrs. LeSouef congratulated those responsible for all the work on the Journal.

EXCURSIONS:

As excursions are going to be planned well in advance, and at least every second month, if you have any ideas of suitable areas for day, week-end or longer trips, could you please bring this information to the next meeting. Accompanying maps and other written details of meeting times, train times, etc. would be appreciated.

SPEAKERS FOR MEETINGS:

It was proposed that speakers be obtained to discuss all aspects relating to Entomology e.g. food plants, parasites.

The Society expressed their congratulations to Miss Jenny Force on her recent marriage to Mr. John Barnett and expressed their sincere wishes to the speedy recovery of Mr. J. Barnes and G. Burns from their illness.

Mr. A. Nebois mentioned that the 10 K.m. maps were not yet available for the data programme and that Dr. Smith will give a future talk on the subject.

EXHIBITS:

G. Mc.Connell - Tailed Emporer Butterfly.
R. Besserdin - Gall-Making wasp from Golden Acacia.
Mr. R. Manskie - Exhibited 22 species of moths and butterflies collected in the Cann River area 28.12.71 - 8.1.72. This was a new locality for *Heteronympha mirifica* Wonder Brown.
Mr. N. Quick. *Jalmenus evagoras*. Common Imperial Blue. A small 'spray' of pupae from a defoliated plant of *Acacia dealbata*. Hundreds of such colonies were seen at Taggerty and Mirimbah (Vic.) with a black *Iridomyrmex* ant.
Jalmenus ictinus, Ictinus Blue. Taken from Thornton (Vic.). An irregular visitor to the Kerrisdale - Acheron area. Small colonies were seen on *Acacia dealbata* - Silver Wattle attended by the meat ant, *Iridomyrmex detectus*. If both *J. evagoras* and *J. ictinus* are present this ant takes over both species.

Correction to P. 5, February 'Victorian Entomologist'. Heading should read "Description of the larval and pupal stages of *Lucia limbaria* Swainson, the 'Small Copper". (Lepidoptera, family Lycaenidae).

Victorian Occurrence of *POLYURA PYRRHUS SEMPRONIUS* (FABRICIUS) 1793 (LEPIDOPTERA : NYMPHALIDAE : CHARAXINAE)

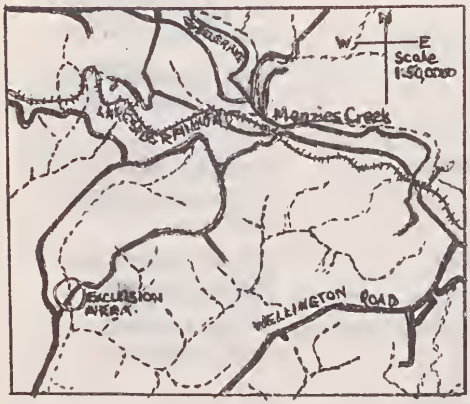
Tailed Emperor

by Glynn Mc.Connell

Received 18/2/72

One male caught and two others seen in Beaumaris. Their habits were typical of the Tailed Emperor - flying powerfully and fairly high. They often landed on a half-dead gum tree, sucking up the sap. The male was caught in early January and had been around for nearly a month - Glynn McConnell.

EXCURSION TO CARDINIA CREEK SUNDAY 27th. FEBRUARY 1972



The area concerned adjoins a tributary of Cardinia Creek at present being flooded as part of a new water storage project. It is mainly dry Eucalypt forest with sufficient undergrowth and long grass to make movement on foot slow on the lower slopes and in the gullies. The *Carex appressa*, Tall Sedge, which grew along the swampy border to this particular tributary, has already been drowned by the rise in water level and its dependant butterfly *Heteronympha cordace cordace*, the Bright-eyed Brown, which once occurred there, seems to have disappeared. The large *Gahnia sieberiana*, Red-fruit Saw-sedge, may also be swamped in time, but as it grows further up the slopes than the Carex, this is not yet possible to say with any certainty. Its dependent butterfly *Tisiphone abeona albifascia*, The Sword-grass Brown, was still in the area: a number were sighted but none captured.

The following species of butterflies were taken or observed:

Species	Common Name	Notes
Signeta flammeata	Bright Shield Skipper	A few on lower slopes.
Hesperilla donnysa patmos	Donnysa Skipper	One half-grown larva found.
Dispar compacta	Dispar Skipper	Common, particularly on higher slopes.
Pieris rapae	Cabbage White	None taken but several sighted.
Delias harpalyce	Imperial White	Four sighted flying around treetops.
Zizina otis labradus	Common Grass-Blue	Not uncommon.
Geitoneura klugi klugi	Klug's Xenica	Common, males more worn than females.

Species	Common Name	Notes
Geitoneura acantha ocrea	Southern-Ringed Xenica	Less common than *G.klugi*, males more worn than females.
Heteronympha merope merope	Common Brown	Most common butterfly almost all females.
H. penelope sterope	Shouldered Brown	Several males seen, none captured.
Oriexenica kershawi kershawi	Kershaw's Brown	Not uncommon on higher slopes.
Tisiphone abeona albifascia	Sword-grass Brown	A few sighted, none captured.

Other Families taken were:

PHASMATODEA: Stick and leaf insects
(Ctenomorphodes tessulatus)

HYMENOPTERA: Ants, Bees, Wasps, Sawflies
Pompilidae,
(Salius bicolor)
(Chryptocheilus species)

Ichneumonidae,
(Ichneumon species)

Ophioninae,
Braconidae,
Gasteruptiidae,
Sphecidae,
Halictidae,

Formicidae,
(Iridimyrmex foetans)
(Myrmecia species)
(Camponotus species)

Pergidae

DIPTERA: True Flies
Tachinidae,
(Rutilia species)

Tabanidae,
(Tabanus froggati)
(Tabanus species)

DIPTERA: (Cont.)
Staiomyidae,

Surphidae,
(Erastilas tenax)
(Surphus viridiceps)

Muscididae,
(Musca domestica)
(Musca vestustissima)

Calliphoridae,

Tupilidae,
(Macromatix species)

ODONATA: Dragon & Damsel flies

Gomphidae,
(Austrogomphus otratius)

ORTHOPTERA: Grasshoppers and Crickets

Acrididae,
(Gastrimargus musicus)
(Goniaea australasiae)

Tettigoniidae,
(Conocephalus sp.)

Grylidae,
(Teleogrylus commodus)

HEMIPTERA: True Bugs
Fulgoridae,
Eurymelidae,
Pentatomidae,
Membracidae,

Coreidae,
(Rococerus australasiae)

COLEOPTERA: Beetles
Crysomelidae,
Coccinelidae.

The PHIGALIA SKIPPER, *TRAPEZITES PHIGALIA PHIGALIA* HEWITSON (LEPIDOPTERA, Subfamily TRAPEZITINAE)

by W.N.B. Quick
C.W.McCubbin
February 1972

Distribution: New South Wales, Victoria, and Mt. Lofty, S.A. Mainly foothills, coastal of the Divide.

Foodplant: *Lomandra filiformis*, a rather stiff-foliaged, tussocky plant, growing to about 30-40 cm. in height. Leaves are distinctly blue-green, 3-10 mm. in width, linear, and slightly serrate at the edges. Leaf-tips are rounded, and generally dry.

Notes: Probably more widespread than its absence from many collections would suggest, the Phigalia Skipper is a butterfly of warm spring days. It is single brooded, appearing on the wing late in October in the southern part of its range, earlier in the north. With a wing-spread of only 30-35 mm., it is not a large insect, nor is it conspicuous on the wing, often seeming to materialise out of nowhere as it pauses for a moment to sip nectar from one of the multitudes of yellow spring flowers.

The foodplant is both hardy and reliable, and certainly not unattractive as a garden plant. As the larvae have little tendency to wander, rearing the butterfly at home is not difficult, but they could well be covered by net, as many fall victim to both Dipterous and Hymenopterous parasites. A clump of several foodplants in the garden should support a viable colony of this butterfly, as it appears remarkably oblivious to human presence.

Life-history: It seems incredible that the early stages of this relatively abundant and widespread species should have escaped description for so long, yet such appears to be the case. The eggs are

roughly hemi-spherical, with faint vertical lines or ribs, cream to grey-white, and relatively large. They are deposited singly on the foodplant, often after a great deal of hovering and deliberation by the female butterfly as she selects a suitable site.

The larva is stout, 20-28 mm. in length at maturity, pinkish-grey in colour, shagreened to granular, with five faint brown-black longitudinal lines, the mid-dorsal one the most distinct. Head prominent, almost black, rough, and lacks a distinct furrow at the top. The larvae are nocturnal, but are easily located late in winter, when they are feeding actively, for the diagonally 'scissor-snipped' appearance of the half-eaten foliage is unmistakable - and save for a few closely-related species, few other insects attack the foliage of this plant to confuse the issue. The larval shelter is invariably close to the base of the leaves on which the larva has been feeding, and is normally constructed wholly or partly of the dead foliage of the same plant. Larvae normally pupate in this shelter, or occasionally in a curled leaf near the base of the foodplant.

The pupa is stout, sub-cylindrical, 17-20 mm.in length, tapering abruptly in the posterior segments, and suffused with a variable blue-grey bloom, sometimes almost absent. Pupal cap with a slightly raised dark prominence. Extremities shortly and sparsely pubescent to bristly. Auricles at the wing-bases black and prominent; between them, dorsally on the thorax immediately behind the head, a pair of broad black streaks, slightly convergent towards the anterior end.

Received 18/2/72.

BOTANY FOR ENTOMOLOGISTS

by J. F. HUTCHINSON

Insects have diverse and numerous habitats, therefore the Entomologist needs to have a knowledge of disciplines other than his own. The collector searching for eggs, larvae and pupae will take an interest in Botany in order to find host plants. To find certain plants he may have to look for certain habitats and soils, therefore a smattering of geology could be valuable. To fit this information together and relate it to other animals and plants a knowledge of ecology is needed.

This article will deal with one of the most interesting aids an Entomologist will need: Botany.

The classification of plants is based on the same principles as that of animals, except that where insects belong to the Class Insecta, plants are three ranks higher being in a Kingdom of their own, Plantae. The basic classification of plants is best illustrated by the diagram below. Corresponding taxa for insects are in brackets.

Class			Plantae		(Animalae)
					(Arthropoda)
Phylum	Thallophyta Fungi, Algae	Bryophyta Mosses & Liverworts	Pteridophyta Ferns	Spermatophyta Seed-bearing plants	
Sub-Phylum			Angiospermae	Gymnospermae	
Class		Monocotyledonae		Dicotyledonae	(Insecta)

Class is further divided into Order, Family, Genus and finally, Species. With insects we find that Order is the major unit of classification, viz. Lepidoptera, Coleoptera, etc., but with plants it is the Family, viz. Roseaceae, Graminae, etc.

With a few exceptions plants from Thallophyta, Bryophyta and Pteridophyta are not normally considered as good for collecting. Bracket Fungi (Thallophyta) yield some interesting Coleoptera.

Spermatophyta is the most important; this Phylum contains the true seed bearing plants. If they produce naked seeds on scale-like tracts which are often grouped to form cones, they belong to Gymnospermae, which include the conifers. However if they develop true flowers and bear seeds in an ovary, they belong to Angiospermae or the true flowering plants, the largest and most important group.

Monocotyledonae has a number of entomologically important families.

1. Graminae (Poaceae)

Widely spread Family of about 600 genera and 9,000 species. Most members are herbs, but some are woody, e.g. tropical bamboos. Stem is always jointed, with solid nodes and usually hollow internodes, except in rhizomes where they are solid.

Leaves arise from nodes and have a sheath running up the stem for some distance and then leave the stem as the lamina. The junction of the sheath and lamina is the ligule which may be membranous and hairy. Also at the junction may be auricles which vary in size and shape. Variations in the ligule and auricle are used in the identification of grasses. The venation of the lamina is typical of monocotyledons, i.e. parallel.

Flowers are not in single units but in spikes consisting of a number of flowers. They are usually bisexual, some are unisexual, e.g. maize. Individual flowers have 3 stamens and 2 feathery stigmas.

Any grasses near streams are valuable collecting as they act as refuge plants for caddis flies, crane flies, stone flies and damsal flies. Many Satyrinae are associated with Poa species. Tetrarrhena juncea (Forest Wire Grass) is used by *Orixenica kershawi* as a host plant. *Heteronympha banksi* and *Toxidia andersoni* are often associated with it. This grass is commonly found throughout the damp mountain forests of Victoria and is abundant in the Dandenongs.

Melanitis leda banksi lays single eggs on *Imperata cylindrica* sugar cane and a range of other grasses.

I. Cylindrica, (Blady Grass) is widespread on poor and sandy soils in many parts of Victoria and S.E. South Australia, except the Mallee. It is perennial up to 1 metre, devoid of hairs except for tufts often at nodes. Laminae are about 30 cm., with conspicuous flowers from August to March.

2. Cyperaceae

Comprising of about 100 genera and 3,000 species, with a wide distribution in all parts of the world. Most often growing in wet places. Similar in many respects to Graminae, however the stem is solid (as opposed to hollow) and usually triangular when cut transversely. (Where Graminae is round).

The Genus Hesperilla (Sub-family Trapezitinae) is dependent on the various species of Gahnia, the so-called sword grasses or saw sedges.

Cyperus (from which the family takes its name) is also a food plant for some Hesperilla. Nut grass, *Cyperus rotundas* is a well-known species.

3. Liliaceae

Family of about 250 genera and 3,500 species, which is widely spread throughout the world. Most of its members are perennial herbs, having rhizomes, bulbs or corms. Woodiness is rare, an Australian example is Xanthorrhoea (Blackboy or Grass Tree), the flower spikes of which are good collecting for a variety of insects, particularly Coleoptera.

Leaves are variable, usually entire, long and narrow, presence of a petiole is rare.

The calyx consists of 3 sepals and the corrola of 3 petals forming two whorls or a floral envelope which is called a perianth.

Lomandra is a Genus of interest as it is a host plant for a large number of Trapezites species. Members of the Genus are dioecious, i.e. there are male and female plants. They are perennials with narrow hard linear leaves up to 80 cm. long, almost all of which are basal and usually much longer than the inflorescence. Some species are popularly called Iron Grass or Mat-rush.

4. Iridaceae

A smallish family with about 70 genera and 1,000 species, again widely spread but mainly in South Africa and South America. Has the same general characteristics on Liliaceae, but stamens number only 3 as opposed to 6.

All members are perennial with corms or rhizomes and bulbs to a lesser extent.

Flowers are zygomorphic or bilaterally symmetrical i.e. can only be cut through one verticle plane to form two equal and identical halves.

Well known members are Ixia and Gladiolus. Entomologically important is *Patersonia*, a food plant for *Mesodina*. They are perennial herbs, whose leaves form a tussock. Flowers are mainly blue, rarely yellow or white, lasting only one day but produced in a succession from a spathe. (A large bract enclosing a flower cluster).

Dicotyledonae is the other important Class of which further study is valuable.

5. Mrytaceae

Widely spread Family of 90 genera and about 3,000 species. The main centres of development are Australia and Tropical America. In Australia the family runs second to Leguminosae in number of species. In most areas of Australia the Family forms a conspicuous part of the vegetation, Eucalyptus being most prominent.

Members are evergreen trees or shrubs, with thick leaves which contain oil glands. Leaves are usually opposite one another or alternately placed along the stem.

Flowers are bisexual and actinomorphic. (i.e. radially symmetrical or able to be cut through two or more vertical planes into similar halves). There are usually 5 (sometimes 4) petals with numerous stamens often long and coloured.

Fruit is a woody capsule, as in most Australian species, e.g. gum nut from Eucalypts, or a berry. A berry fruit is uncommon in Australian members of the family, the *Eugenia* (Lilly Pilly) is an example.

The Family is divided into two Sub-families on the basis of the flowers.

Sub-family (A) Myrtoidae

Contains the economically important Genus Eucalyptus. The flowers are good collecting for a wide range of orders particularly Coleoptera and Lepidoptera, and the foliage for Coleoptera particularly Chrysomelidae. A large genus of about 670 species and varieties which is almost exclusively Australian, a few species occur in New Guinea and other northern islands. It is a most difficult genus to classify, because of the close relationships between the species and the remarkable variability in all parts of the plant. The time of flowering is also very erratic, however the anthers form the basis of classification.

The closely related genus *Angophora* is also good for collecting; flowers and foliage are both profitable.

Sub-family (B) Leptospermoidae

This section contains the plants with bottlebrush and tea-tree type flowers. *Leptospermum* (Tea-tree) is a genus of about 30 species, mainly Australian. The 3 species *L. laevigatus, pubescens,* and *myrsinoides,* when in flower are very good for collecting *Stigmodera* as well as a selection of other Orders.

Commonly called Heath Myrtles, the genera *Baeckea* and *Thrypotomene,* when in flower are good for collecting Diptera.

Callistemon (Bottlebrushes), *Melaleuca* (Paperbarks) and *Kunzea* are closely related genera, the flowers of which are fruitful for many different Orders.

6. Logoniaceae

A family not well represented in Australia, in fact having only 6 Genera. The larva of *Virachola smilis dalyensis* feed in the small orange fruits of *Strychnos lucida*.

Also in the family is the Buddleia (Butterfly Bush) well known for its perfume which attracts many species of Lepidoptera.

7. Thymelaeaceae

Another of the smallish Families. *Pimelea* is important as a refuge and a host plant. Periodically visiting it are *Stigmodera* species and a number of Lepidoptera including *Vanessa kershawi* and *V. itea*. Larvae of *Candalides xanthospilos* feed on various species of it.

8. Compositae (Asteraceae)

Second largest Family of flowering plants, it is only exceeded by Orchidaceae. There are about 300 genera and 13,000 species. It is spread widely throughout the world and there is great diversity in vegetative form, the majority being herbaceous; trees and shrubs are rare. Some members are water or marsh plants, other are xerophytic, few are climbers.

Individual flowers are known as florets, arranged on the enlarged end of the stem which forms a common receptable.

Many economically important plants are found in the Family, including lettuce, Jerusalem artichoke, Dahlia, Aster, as well as a number of important weeds. *Chrondrilla juncea* (Skeleton Weed), *Taraxacum officinale* (Dandelion), and *Cryptostemma calendula* (Capeweed) the last two of which are host plants for *Vanessa kershawi*.

Helichrysum (Everlasting) is also a host plant for *V. kershawi*. *H. bracteatum*, the Golden Everlasting is a well known native perennial.

The yellow flowers of Senecio are good for collecting Lepidoptera which feed on the nectar.

9. Rutaceae

A widely spread Family, found mostly in tropical and Sub-tropical regions and best developed in South Africa and Australia. Composed of about 140 genera and 1,500 species. They are mainly trees or shrubs, rarely herbs.

Leaves are simple and compound which are exstipulate, glabourous, often leathery and aromatic. Flowers are bisexual, rarely unisexual with 4 or 5 petals in a star formation and many stamens in bundles.

Well known genera in the Family include *Boronia*, *Correa*, *Phebalium* and *Eriostemon*. *Eriostemon* is endemic to Australia and most of the 20 species have white flowers (some are pink or blue) flushed with pink on the outside, and are good for collecting Diptera.

Also in the Family is the Genus *Citrus* of which the lemon, grapefruit, orange and lime are members. In the Murray Irrigation Area, *Papilio aegeus* is a pest of citrus, the larvae feeding on the leaves.

10. Leguminoseae (Fabaceae)

Third largest family of flowering plants with about 600 genera and 12,000 species. Fruit is a legume (dry dehiscent fruit formed from a single carpel and splitting along two sides when mature).

Members include trees, shrubs, climbers and xerophytes. A Family of tremendous ecological and economic importance because of symbiotic relationships members have with certain bacteria. A number are important as fodder plants, (clover, lucerne, medics) some are vegetables (peas, beans, and peanuts). Some are poisonous to stock and others provide useful drugs.

It is divided into 3 sub-Families, (which many modern botanists have elevated to rank of Family) on the basis of whether the flowers are actinomorphic (regular), zygomorphic (irregular), or very irregular.

Sub-Family Mimosoidae

Contains only 3 Genera, *Acacia*, *Albizzia* and *Neptunia*. *Acacia* is the most important economically and entomologically, being good for collecting Lepidoptera and Coleoptera. All species of *Jalmenus* feed on *Acacia*, except for two which feed on other legumes.

Sub-family Caesalpiniodeae

Cassia has world wide distribution with about 450 species, of which about 30 occur in Australia, mainly in the north. In bud the wings (two main petals) surround the standard. Flowers are slightly zygomorphic. Members are shrubs with pinnate (i.e. a compound leaf whose leaflets are arranged, one on each side of a common petiole or axis). A number of Lepidoptera use *Cassia* as a host plant, including *Polyura pyrrhus sempronius*, *Catopsilia pyranthe crokera* and *Eurema smilax*.

Sub-Family Papilionatae

This Sub-Family contains the plants with flowers that are typical "pea-type". Botanically the flower is distinguished by the 5 sepals, the largest of which is the standard, 2 lateral wings and 2 lower ones united to form a keel which encloses the androecium (male reproductive parts) and gynoecium (female). A number of Genera are important including *Dillwynia*, *Pultenaea*, *Daviesia* and *Crotalaria*.

11. Roseaceae

Family of about 100 genera with 2,500 species and innumerable cultivars. Found mainly in the Northern hemisphere with only a few representatives in Australia. Of considerable economic importance, for in the family are found the majority of the fruit trees, hybrid garden roses, and a number of berry crops.

The flowers of *Rubus* (e.g. Blackberry) which are white, supply nectar for some *Papilio* and *Hesperiidae*.

It is worth noting that the members of Roseaceae have only 5 petals as a rule. The extra petals in hybrid roses are due to selective breeding and are called petaloid staminodes.

12. Santalaceae

Most of the members are parasitic on the roots of other plants, and the leaves are often reduced to scales.

Exocarpus (Native Cherry), *Choretrum* (Berry Broombrush) and *Santalum* (Quandong) are the food plants for some Ogyrinae and some *Delias* species.

13. Loranthaceae

Commonly called the Mistletoe Family, the Genera *Muellarina* and *Amyemae* are parasitic on some *Eucalyptus*, *Banksias*, *Acacias* and *Casuarina* species. Larvae of *Ogyris* feed on them and pupate under the bark or in the nest of the attendant ants.

This article has scratched only the surface of the entomologically significant plants. Many more Families could have been incorporated but these are the more common ones and those which are easily distinguished.

Article received 18.2.72.

INSTRUCTIONS TO AUTHORS:

1. All articles should be sent to the Editor, type-written in double-spaced typing, the pages numbered, and a good 1¼" margin on both sides. Articles should preferably be written in the third person. The author should keep one copy for himself and forward at least two copies to the Editor, at least five (5) weeks before the newsletter is to be sent out.

2. The Publication Committee shall be checking all articles, using the CSIRO 'Guide To Authors' as a guide to lay-out, which is available from the Secretary at 50¢ per copy.

3. If authors, or any members require surplus copies of the newsletter, could they please advise the Secretary in advance (20¢ per copy).

LAYOUT:

A consise method of presentation is essential, and spelling, especially of scientific data should be thoroughly checked before submitting the article to the Editor.

All measurements should be submitted in the Metric System.

1. TITLE: followed by name of contributor. (Initials of male, Christian name of female).

2. INTRODUCTION: briefly stating principle results of work, significance of of articles e.g. new observations, new theories etc.

3. TECHNIQUE: where material is situated now e.g. in museums, private collections, should also be included.

4. RESULTS: Consisely written, and arranged in organized form for rapid reference. Illustrations and tables may be included here to accompany descriptive text.

5. DISCUSSION and CONCLUSION: should include interpretation of results with a clear statement as to their general or specific significance and their contribution towards previous results by author or other investigators.

6. ACKNOWLEDGEMENTS: i.e. Contributions by associates, or if permission of an authorative body has been required.

7. REFERENCES: Adequate but not excessive, arranged alphabetically under authors' names.

ILLUSTRATIONS:

Line drawings and tables to be drawn in black ink on white paper or card, or good quality tracing paper. Compass directions should be placed on maps and geographical plan views. Graphic scales must be included with the drawing.

PHOTOGRAPHS:

All photographic black and white prints should be prepared in actual size, mounted on white card with a 5 cm. surrounding margin, and clearly labelled on the back of the card.

Sharp black and white negatives may be submitted and the size of the desired print must be clearly indicated.

A nominal fee of $2.70 shall be paid by the author to pay for the metal plate, and an extra $1.50 if it is necessary to prepare a print from a negative. (i.e. $1.50 for a 10" x 8" print).

Explanation of plates should appear at end of paper after references.

Taken from the C.S.I.R.O. Guide to Authors

"Authors must accept responsibility for adherence to the International Rules of Botanical and Zoological Nomenclature.

When the scientific name of a plant or an animal forms part of the title, the higher groups to which it belongs should be indicated in brackets. This information should comprise at least two names, usually those of the order and family, but higher categories may sometimes be necessary". (e.g. Vanessa kershawi (McCoy) (Lepidoptera : NYMPHALIDAE).

"The authority should be included with the scientific name where a species of plant or animal is first mentioned in the text. If the authority is given in the title, it should not be repeated in the Summary as this will always be read in conjunction with the title. For the same reason the generic name may be abbreviated in the Summary when it is given in full in the title, but must be given in full in the text when the authority is included.

Common names of plants and animals should be followed by the scientific name where first mentioned in the text".

Common names should be followed by scientific names and common names of plants and animals should be capitalized. A small initial letter should be used in the specific name of all plants and animals.

The spelling adopted should be that used in the Oxford Dictionary.

VICTORIAN ENTOMOLOGIST

The Journal of
THE ENTOMOLOGICAL SOCIETY OF VICTORIA
VOL:2.NO.3
JUNE 1972.

Price 20¢

Registered for posting as a periodical - Category B -

THE ENTOMOLOGICAL SOCIETY VICTORIA

OBJECTS

(a) To stimulate the scientific study and discussion of entomology in all its aspects.
(b) To gather, preserve and disseminate knowledge of Australian species of insects.
(c) To compile a list of known species of Victorian insects.
(d) To bring together in a social and scientific atmosphere all persons interested in entomology.

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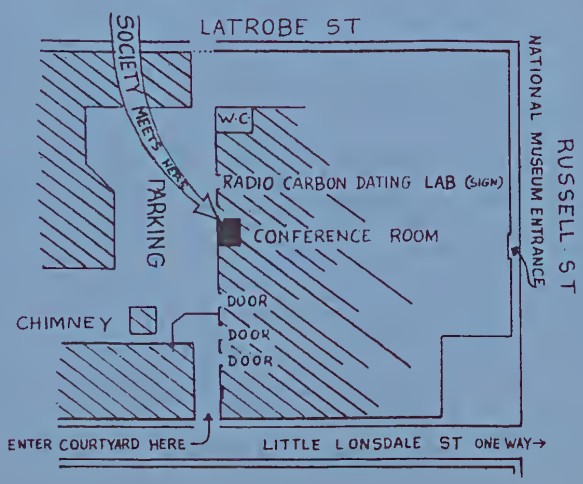
Open to all persons interested in entomology. Applications or enquiries re membership should be addressed to the Hon. Secretary.

MEETINGS

The Society's meetings are held in the Conference Room at the National Museum (see inset). Meetings start at 8 p.m. sharp on the second last Friday of alternate months commencing with the annual general meeting in February. Visitors are always welcome.



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V.E.S. ACTIVITIES.

OFFICE BEARERS FOR 1972:

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Hon. Treasurer: Mr. B. Condon, 96 Shannon St., Box Hill Nth., 3129.

Immediate Past-President: Mr. P. Kelly.

The "Victorian Entomologist" encorporates "Wings and Stings".

The statements and opinions expressed in this Journal are the views of the respective authors, and not necessarily those of the Society.

COMING EVENTS:

Friday, June 16, 1972.

General Meeting, "Aquatic Insects". Speaker: Mr. Paul Genery.

MEETING DATES FOR 1972:

August 18, 1972 "Grid areas for Faunal Studies"
Speaker: Dr. Brian Smith.

October 20, 1972 "Suggan Buggan".

December 15, 1972 (Third Friday of the Month).

REPORTS AND NOTICES

General meeting, Friday, April 21st, 1972. The Immediate Past-President Mr. Kelly chaired the meeting which was attended by 35 members and friends. Apologies were received from Mr. C. McCubbin, Mr. A. Morton, Mr. & Mrs. R. Manskie, Mr. A. Haffenden, Miss White, Mr. M. Connor and Mr. J. Barnes.

The Minutes of the previous meeting were read and confirmed.

NEW MEMBERS

We wish to welcome the following new members:

Mr. R. Pound, 21 Miriam Street, Rosanna (Interest - Formicidae).
Mr. O. Rogge, 22 Arthur Street, East Coburg (Interest - Chrysidae).

TREASURER'S REPORT

The Treasurer reported a balance of $63.15 with the present number of financial members standing at 40. There are still a number of members who have not paid their subscription for the year.

THE NEWSLETTER

1. At the end of the year an index with cross references to authors, fauna and flora shall appear with the Journal.
2. It was decided that the price of advertising in the Journal be $5 for a full page advertisement, and $2.50 for a half page.
3. The number of Reprints available to Authors was discussed at the Publication Meeting. It was decided that upon request, an author is entitled to receive two extra copies of the Journal, and as many others at the reduced rate of 10c. per copy.

CORRESPONDENCE was received from

1. The Entom. Soc. of Australia (N.S.W.) Circular No. 222.
2. News Bulletin of the Entomological Soc. of Queensland No. 84. March 1972.
3. Nomination form for the Australian Natural History Medallion sent from the Secretary of the General Committee, 45 Eastgate St, Oakleigh, dated 1.2.72.
4. Teen International Entomological Group, U.S.A., advising that their display for the International Congress of Entomology shall be left in Australia, and that the Society may make use of the exhibit if they wish.
5. Journal of the Australian Entomological Soc., Vol. 11. No. 1. March 1972.
6. News Bulletin, Entomological Soc. of Queensland. No. 85. April 1972.
7. T.I.E.G. Newsletter. Vol. 6. No. 2. Summer 1971.

The speaker for the evening was Mr. N. Quick, who discussed various 'Butterfly Food Plants'. He explained that with the theory of Continental Drift, it appeared likely that India was at one time joined to the North-western section of Australia and that the Western section of South-East Africa was joined to the West and South-West portion of Australia and the West coast of South America to the Eastern Australian Coast. When these Continents separated, both retained portions of similar vegetation and butterfly fauna. Mr. Quick then went on to explain with slides and various native food plants from which native butterflies fed, and reasons why some plants were chosen by the butterfly in preference to others when egg-laying. It was a very interesting talk on a little-known subject.

Mr. Quick has prepared a "Check List of Australian Butterflies", available now at $1.50 per copy. Please order from the author.

EXHIBITS

Mr. A. Bishop - Species of Brown butterflies taken from the Beech Forest (Otways, Vic.) area with the same race from Melbourne area in comparison.

****

As we must vacate the Conference Room at 10 p.m. sharp, it was decided at the General Committee meeting to commence the meetings at 7.45, and allowing ½ an hour for general business, 1 hour for the Speaker, this will give members time to discuss any information between themselves.

EXCURSIONS

As it was decided to investigate as many areas within Victoria as possible - both old and new - the following areas were decided upon -

1972: Waratah Bay-Show weekend. (28 Sept - 1 Oct 1972.)
Big Desert - Small group with D. Crosby (Nov. 4-7, 1972).
Suggan Buggan/Snowy area (16-23 December 1972).

1973: Inglewood (A.N.A. Weekend. 27-29 Jan. 1973).
Sunset Country (proposed February, 1973).

For any information about these excursions, please contact Mr. N. Quick, Excursion Secretary (560 8145).

A map, and general information about the trip shall appear prior to the excursion in the Journal.

WANTED at the time of the Entomological Congress; living *Echidnaphaga gallinaceus* - Stick-fast Flea. Please contact the Hon. Miriam Rothschild, Ashton, Peterborough, England, before July 1st, or during the Congress.

Miss R. Shepherd
Keith Turnbull Research Station
Frankston.

NEW PUBLICATIONS

Landsdowne Press
'Australian Insects'
$3.50
Treasury of Australian Wildlife
available from the Australian Museum, N.S.W.
$1.95

RESULTS OF A BUTTERFLY-COLLECTING TRIP TO FLINDERS ISLAND - A.D. Bishop.

Flinders Island is the largest island in Bass Strait. Its topography is dominated by the rugged Strzelecki Range running north-south and reaching up to about 2500 feet above sea-level. Some of the land is farmed, but where natural vegetation remains it is somewhat similar to that of Wilson's Promontory: low sclerophyll forest and woodland, with heath and occasional fern-gullies.

These notes are the result of a collecting trip in late January-early February 1971. Weather was unfortunately unfavourable, so little collecting could be done in the most profitable areas. The area covered was in the south of the island, around the mouth of Big River, Lady Barren and Mt. Strzelecki (the most interesting collecting area).

According to Dr. I.F.B. Common (C.S.I.R.O.), *Neolucia serpentate* and *N. mathewi* are already recorded for Flinders Island; neither of these, however, was seen.

The following species were collected or seen:

FAMILY PIERIDAE:

Pieris rapae (L.), Cabbage White. Seen in several places, especially in towns. Did not appear to be very common.

FAMILY NYMPHALIDAE:

Heteronympha merope salazar Fruhst., Common Brown. Identified by Dr.Common as the Tasmanian race. Plentiful in grassy areas, especially near water. Males more common than females.

Geitoneura klugi klugi (Guer.), Klug's Xenica. Common, in the same areas as the previous species.

Vanessa kershawi (McCoy), Painted Lady. Several seen resting in ground in paddocks, but none taken. Looked fairly fresh.

Vanessa itea (Fab.), Australian Admiral. Two specimens taken, one very worn and the other in fairly good condition. A few others, in varying condition, were seen, both in grassy areas and in forest clearings. The foodplant, the nettle, was found on the island.

FAMILY LYCAENIDAE:

Zizina otis labradus (Godt.), Common Grass Blue. One very worn specimen, probably of this species, taken in long grass by the roadside.

Butterflies that seem to fit the description of *Graphium macleayanus*, Macleay's Swallowtail, were seen on the slopes of Mt. Strzelecki in pockets of rainforest vegetation. None, however, were caught, and the identification is only a guess. It is also possible that *Nesoxenica leprea*, the Leprea Brown, is present.

ACKNOWLEDGEMENTS:

Thanks are due to Dr. I.F.B. Common and Mr. A. Neboiss for their advice and help in identification.

Manuscript received
2.3.72.

SOME BUTTERFLIES OF THE VICTORIAN BIG DESERT

By : D. F. CROSBY

For many years Victorian Butterfly collectors have hunted in the Little Desert area, along with many other enthusiasts, I have visited the "haunts" a number of times, but owing to my predominant interest in the distributional aspects of the Australian butterflies (and subsequently the proclamation of the Little Desert as a National Park) I wanted to find similar but new areas for collecting.

An obvious first choice was the Big Desert area situated about 20-30 miles north of the main Melbourne-Adelaide highway and stretching 50 miles north-south and 45 miles east-west to the South Australian border. Maps indicated the only vehicle access was along a track which ran north from Yanac to Murrayville on the Ouyen-Pinnaroo Road. In my first sortie in November 1958, and subsequently in 1963, this track was very rough and negotiable only with four wheel drive vehicles, but it is now a fairly well graded but sandy road.

My visits have been in late October or early November to coincide with the flight season of the main butterflies in the region, and, in line with experiences in the Little Desert (and other areas) I headed for the highest points - in this case the many sand dunes reasonably close to the road. These varied from about 50 to 150 ft. in height and those with open sandy areas on top, with a few low shrubs, are best as the "Skippers" and "Blues" prefer to fly there.

Over my visits quite a number of sand hills have been looked at, but the highest are the best for butterflies, and one can expect to catch the following species, most of which I have taken on each occasion :

Cyprotides cyptrotus cyprotus	-	"Cyprotus Blue"
Erina hyacinthina simplexa	-	"Western Dusky Blue"
Erina acasta	-	"Blotched Blue"
Neolucia agricola agricola	-	"Fringed Blue"
Neolucia serpentata serpentata	-	"Chequered Blue"
Nacaduba biocellata biocellata	-	"Double Spotted Lineblue"
Trapezites sciron eremicola	-	"Sciron Skipper"
Motasingha dirphia trimaculata	-	"Dirphia Skipper"

Generally speaking, most of the specimens caught on the tops of the dunes are males, as these spots are apparently their play areas. The females are taken on the lower slopes of the dunes or in the depressions at their bases, amongst the food plants. The females of *C. cyprotus*, *T. sciron* and *M. dirphia* are quite rare, but this may be due to most collecting having been done early in their flight seasons, and mainly where the males fly.

During my most recent visit, October 30th and 31st, 1971, accompanied by Messrs. W.N.B. Quick and D.E.A. Morton, two very interesting new records were obtained.

The first of these was the Small Brown Azure, *Ogyris otanes*. On walking along the crest of a low sand ridge at about 3 p.m. (Eastern Standard Time) I saw a small blackish butterfly hovering near the ground next to a clump of Mallee. As I approached it flew downhill into the wind and I chased but missed it. On walking up the hill again I could see two or possibly three of the same insect fighting, silhouetted against the sky. I managed to net two of these and was very excited to find that they were an *Ogyris*. My immediate reaction was that they were *O. idmo* - the "Large Brown Azure", as they appeared fairly purplish underneath, although rather small for that species. I could see no more so returned to the road, but in so doing saw another specimen flying close to the ground on a higher hill and what appeared to be another flying round a tree.

Next day we decided to comb the area thoroughly, although still not positive as to what species it was. Thinking it may be *O. otanes* we carefully checked in the patches where the bush *Choretrum glomeratum* the "Common Sour-bush" grew, at the same time looking for sugar ants *Camponotus* sp. However, we have no success at this, but we sighted two specimens flying and Mr. Quick was fortunate to net a nice female, settled on a dead branch, close to the ground at about noon.

At about 12.30 p.m. we noticed two flying towards the top of the ridge and these were caught. From then till about 4 p.m. seven specimens were bagged in one confined area close to where I had caught the two the day before. In all we captured nine males and three females. Unfortunately, time did not permit a more thorough search for life histories as we were

anxious to catch the adults. We were also still not completely sure of whether the specimens were *O. otanes* and *O. idmo*.

On the following day, a party led by Mr. Charles McCubbin visited the area and Messrs. Ray Manskie and Bob Condron each caught one further male. The same group pushed on right up to Murrayville and believe they saw other specimens further north before the *Choretrum* disappeared.

The other interesting record from the same trip was a perfect female of the "Black and White Skipper", *Motasingha atralba atralba*, caught by Tony Morton in a depression between the sand hills near where the *O. otanes* were netted. We made a short search of the vicinity for its food plant (presumably the "Little Sedge", *Gahnia lanigera*) but could not locate any. This insect has recently been recorded from near Hattah Lakes, where Mr. Morton had success with it this season.

As a post-script, I should add that on returning to Melbourne, the *Ogyris* specimens were identified as *O. otanes*. In comparing them with a series from the typical locality of Kangaroo Island, which are brownish and quite distinctly marked on the underside, particularly the hind wing, the Desert specimens are very much less distinctly marked and have a darker appearance with a purplish sheen on the underside of the wings.

Other records of the species come from South-Western Australia, and the Yorke Peninsula, South Australia. Doubtless, the species will be found at intervening localities in South Australia.

Manuscript received
7.3.72.

INTERESTING RECORDS FOR VICTORIA

By : S. F. McEvery

Three adults of *Acraea a. andromacha* (Fabricius) (*Lepidoptera: Nymphalidae; Acraeinae*), the Glasswing, were collected at Rutherglen in N.E. Victoria on 13.ii.1972. Specimens comprised 2 females and 1 male. Three others were seen but not collected.

On 3.xii.1970 a female adult of *Holochila goodingi* Tindale, (*Lepidoptera: Lycaenidae; Lycaeninae*) was taken at Kallista picnic ground. It was a near perfect specimen which may indicate that the species has been breeding in the Kallista or nearby area. The foodplant of the species still remains unknown.

An adult male of *Erine h. hyacnthina* (Semper) (*Lepidoptera: Lycaenidae; Lycaeinae*) the Common Dusky Blue was taken on the summit of Mt. William at 3829 feet in the Grampians on 29.i.1972. Mt. William is about 20 miles S.W. of Stawell, this is a long way from where it is normally found.

Manuscript received
11.5.72.

SOME OBSERVATIONS ON THE EMERGENCE OF *Jalmenus evagorus* Don, (*Lycaenidae ; Lycaeninae*).

By : J. F. Hutchinson.

Pupae of *Jalmenus evagorus* were collected on a defoliated branch of *Acacia dealbata* on 13.ii.1971. near Mirimbah (Victoria). Typical of gregarious species the larvae pupated close together along the branch of the host plant. It was observed that the first imago to emerge was from the pupa positioned terminally and the following one to do so was the next one down the branch. This continued until all had emerged.

From the emergence pattern it seems that when the first larva is ready to pupate it moves to the end of the branch and does so. When the next is ready it moves tc a position under the first, and this is continued until all have pupated. Assuming an equal pupation time it is obvious that the first imago to emerge will be the one that is uppermost.

Of the group of 17 pupae collected, the date of the first emergence was 15.ii.1972 and of the last 20.ii.1972, so it took a period of five days under a temperature regime of 10° to $21^{o}C$ for the group to emerge.

Manuscript received
15.5.72.

Manuscript received
22.5.72.

In November, 1945, while collecting near Kiata, Victoria, the late Mr. M.W. Mules had the good fortune to see an apparently freshly-emerged *Ogyris idmo waterhouseri* fly from the ground almost directly in front of him, and which he was able to net.

Closer examination of the area uncovered a sizeable nest of the ant *Camponotus nigriceps* near the base of a mallee, *Eucalyptus viridis*. The nest was opened, and in a gallery just inside the entrance, one pupa of this butterfly was found, together with the empty pupal shell of the butterfly seen on the wing. The live pupa emerged late the same day, November 11th, 1945.

Save for a few tiny herbaceous plants and scattered grasses, this eucalypt appeared to be the only vegetation nearby which could conceivably support the larva of such an insect. It seems improbable however that a eucalypt would be the foodplant of an *Ogyris* butterfly, a genus which is so closely associated with the *Loranthaceae* and *Santalaceae*, both of which families are represented widely in the surrounding districts. Eucalyptus, on the other hand, with over 600 species throughout Australia, has only once been reported as a butterfly foodplant (*Hypochrysops ignita chrysonotus*), and even this appears to have been an isolated and aberrant instance.

This situation has prompted several entomologists, the present writer included, to scour this same area for such plants as Eucarya, Choretrum and Leptomeria. None were found, although *Amyema miqueli* and Leptomeria occur within a mile or so. Reports of the area in immediately preceeding years confirmed that no recent clearing had taken place.

It seems therefore that we may expect the larvae of this rare butterfly, if not carnivorous, either to be fed by the ants, or to feed within the ants' nest on items collected, or nurtured by the ants for their own use. In the latter case, the aberrant life-history might be compared to those known within the genus Pseudodipsas, in which at least one species (*Ps. digglesii*) is a mistletoe feeder, while *Ps. myrmecophila* feeds on food stored by the ants within their nest, and in its immediate environs.

One additional point may be of significance. On that thundery, almost legendary day in early November, 1939 when Mr. Keith Hateley obtained no less than thirty-eight specimens for the Lyell collection, the butterflies were flying low, as is their habit, over mallee re-growth, some three or four feet in height, the original growth having been roughly cleared some two years previously. This stage of growth would not only make the butterfly easily-observed, but may have offered conditions exceptionally favourable to either the ant or the butterfly population. Any areas which have recently been burned, or are in a stage of re-growth should be checked at this time of the year for a possible recurrence of this phenomenal upsurge in the butterfly's numbers.

The butterfly's habit, like *O. otanes*, of settling frequently on or near the groun$ may be significant.

The butterfly which emerged from the pupa located in the ants' nest, together with its pupal shell is at present in the collection of the late M.W. Mules, labelled "Kiata, V., 11.11.45., M.W. Mules. Bd.". The butterfly taken on the wing, together with its pupal shell has been removed from the F.E. Wilson collection and added to the main collection in the National Museum, Melbourne, labelled as above. Both are female insects, the latter forming part of a series of 8 f. and 11 m. insects.

To the best of the writer's knowledge, this constitutes the only occasion on which any trace of the early stages of this butterfly have been found, and was apparently the last seen of the species in the Kiata area.

W.N.B. Quick.

.....

PREPARATION OF WINGS, PALPI, ETC. OF LEPIDOPTERA for MICRO-PHOTOGRAPHY AND MICROSCOPIC EXAMINATION

By : W.N.B. Quick.

After careful removal from the insect, whether fresh or dried, dissected parts of lepidoptera will require stripping of scales and hairs. Treatment of these is a simple process, with the exception of dissections of genitalia, which should be digested in a hot 10% KOH (Potassium hydroxide) solution in place of stage 1. Materials required are for the most part inexpensive, and the slides, if carefully prepared, are permanent.

1. Immerse the part for 15 minutes or so in dilute sodium hypochlorite solution. (50% "White King" is perfectly suitable).
2. With a small, cheap water-colour brush, transfer the part to a watch-glass or other similar vessel. Add a little water, and very gently remove loosened and bleached scales &c. with the brush. The use of two brushes may facilitate handling. Both upper and lower surfaces should be cleaned.
3. Soak for a total of 30 minutes in clear water, changing the water two or three times. If intended for photographic work, parts may be stained yellow or light red at this stage. For optical examination, a blue stain may be preferable.
4. Immerse for 10 minutes in 50% methylated spirit.
5. Immerse for 10 minutes or longer in undiluted spirit. Follow by a similar immersion in alcohol absolute if it is available.
6. While still wet, carefully transfer to a clean glass slide, and gently spread the part into its permanent position.
7. When thoroughly air-dried, which may take a little gentle warmth if alcohol absolute was unavailable, transfer to a clear watch-glass, and 'clear' the part in clove oil or xylol. All traces of cloudiness must be eliminated.
8. When clear, position the part on a slide, and with the point of a fine brush or a pin, carefully lift the part to allow escape of and air-bubbles. Drain off surplus oil or xylol.
9. Place a drop or two of "Depex" mounting medium directly on the part. Check that no air bubbles are entrapped.
10. Moisten a clean cover-glass with xylol, and carefully place on the mounting medium directly over the part. Check that the cover-glass settles evenly, but <u>do not apply pressure</u>. Distorted or over-flattened dissected parts have caused numerous erroneous conclusions. A ready-made "cell" - a round ring or washer of plastic may be required for

the more bulky parts and dissections of genitalia, in order to avoid distortion. Allow to dry in a warm place. Do not stand on edge. Should air bubbles be detected, these can generally be induced to move to an outside edge by leaving the slide tilted after it had dried for a day or two.

"Dupex" mounting medium
Xylol
Glass slides & cover-glasses
Micro-slide cells
Watch-glasses or petri-dishes from laboratory-supply houses.
Small hair brushes of suitable quality from newsagents.

W.N.B. Quick - Manuscript received
22.5.72.

For text to accompany the following illustrations of larva and pupa of *Trapezites phigalia*, see Vol. 2, No. 2 of the "Victorian Entomologist".

Larva: *Trapezites phigalia* (enlarged).

Pupa: *Trapezites phigalia* (enlarged).

Larva: *Lucia limbaria* (enlarged).
Description: Vol.2, No.1

Pupae: *Lucia limbaria* (enlarged)
Description: Vol.2, No.1

VICTORIAN ENTOMOLOGIST

The Journal of
THE ENTOMOLOGICAL SOCIETY OF VICTORIA

VOL: 2. NO. 4
AUGUST 1972.

Price 20¢

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THE ENTOMOLOGICAL SOCIETY VICTORIA

OBJECTS

(a) To stimulate the scientific study and discussion of entomology in all its aspects.
(b) To gather, preserve and disseminate knowledge of Australian species of insects.
(c) To compile a list of known species of Victorian insects.
(d) To bring together in a social and scientific atmosphere all persons interested in entomology.

ANNUAL SUBSCRIPTIONS

Payable in advance and due at the annual general meeting.

Ordinary members	$3.00.
Country or Associate members	$1.00.
Junior members	$1.00.
Student members	$1.00.

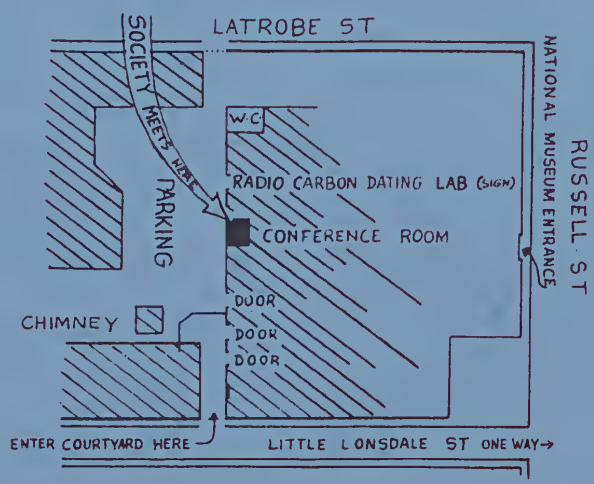
Cheques or money orders for remittance of subscriptions or donations should be made payable to "The Entomological Society of Victoria" and be addressed to the Hon.Treasurer.

MEMBERSHIP

Open to all persons interested in entomology. Applications or enquiries re membership should be addressed to the Hon. Secretary.

MEETINGS

The Society's meetings are held in the Conference Room at the National Museum (see inset). Meetings start at 8 p.m. sharp on the second last Friday of alternate months commencing with the annual general meeting in February. Visitors are always welcome.



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The statements and opinions expressed in this Journal are the views of the respective authors, and not necessarily those of the Society.

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E.S.V. ACTIVITIES

OFFICE BEARERS FOR 1972:

President: Mr. C. McCubbin, 6 Manniche Ave., Box Hill Nth. (89 9171).

Vice-President: Mr. A. Morton.

Hon. Secretary: Miss S. Beattie, 2 Clyde St., Glen Iris. 3146 (50 5263).

Hon. Editor: Mr. A. Bishop, 5 Warnes Rd., Mitcham. 3132. (874 6119).

Hon. Treasurer: Mr. R. Condron, 96 Shannon St., Box Hill Nth. 3129.

Hon. Librarian: Mr. R. Thompson, 5 Foote St., Elwood. 3184. (96 2541).

Excursion Secretary: Mr. N. Quick, 20 Alimar Rd., Glen Waverley 3151. (560 8145).

Immediate Past-President: Mr. P. Kelly.

DIARY:

Friday, August 18, 1972.
General Meeting, "Grid Areas for Faunal Studies",
Speaker: Dr. Brian Smith.

October 20, 1972. "Suggan Buggan" N.W.

December 15, 1972. (Third Friday of the Month).

EDITORIAL

Ray Besserdin has retired from the position of Editor and has been succeeded by me.

It is rather disappointing to see how few articles we have in the present issue, particularly when one of the major articles is not even from a member of the Society. Another distressing feature of the last few issues (although not so much of this one) is that there have been very few articles on any subject other than butterflies. It would be good to see articles on other insects, not only beetles but also other orders less familiar to most members. Results of research, species lists for particular areas, and general observations are all welcome. If anyone is worried about fitting an article to the scheme outlines in "Instructions to Authors" (Vol. 2, No. 2, April, 1972), then perhaps he or she would like to discuss this with me or another member of the editorial committee either at a meeting or over the phone (my phone number is 874 6119). Remember, it is up to the members to keep the journal going.

If you did not receive the June edition of the journal, then your subscription for 1972 is overdue. Because of postal regulations, non-financial members will not receive the journal as from this issue.

It is hoped that a members' list will appear in the next issue of the journal.

A.D. Bishop

REPORTS AND NOTICES

GENERAL MEETING, Friday, June 16th, 1972. The Vice-President chaired the meeting which was attended by 39 members and friends. Apologies were received from Mr. & Mrs. J.C. LeSouef, Mr. B. Condron, Miss Matherson, Mr. & Mrs. G. Burns. The Society wished a speedy recovery of Mr. Burns from his illness.

The minutes of the previous meeting were read and confirmed.

NEW MEMBERS

We wish to welcome the following new members:

Mr. W. Delaney, 73 Park Rd, Cheltenham. 3192.
Mr. M. Durkin, 7 Avondale Gve, Mt. Waverley. 3149.
Mr. A. Walford-Huggins, P.O. Box 169, Cairns, Nth. Queensland. 4870.

CORRESPONDANCE was received from;

1. Australian Entomological Society News Bulletin, Vol.8. Part 2, May 1972.
2. Australian Entomological Society Journal, Vol.11, No. 2. June 1972.
3. Teen International Entomological Group Newsletter, Vol.6, No.2. 1971.
4. Teen International Entomological Group Newsletter, Vol.6, No.4.
5. Teen International Entomological Group Members List.
6. News Bulletin of the Entomological Soc. of Q'land. No.86, May,1972.
   No.87,June,1972.
7. Rural Research in CSIRO Journal. No.75, March 1972.
8. The Peninsula Conservation League Newsletter. No. 19, May 1972 with their petition against the construction of a sewerage pipeline and road on the foreshore between Safety Beach and Rosebud.

The speaker for the evening was Mr. Paul Genery with a talk on 'Aquatic Insects'. Mr. Genery gave a very interesting account on the life histories of these complex and fascinating insects, showing aspects of their physiology. He completed his talk with a home movie of several species photographed through a microscope.

EXHIBITS

1. Mr. R. Manskie: Three boxes containing several of the 98 species of butterfly taken on his Cooktown Trip (8.4.72. - 4.6.72.)
2. Mr. F. Hallgarten: Collection of Aquatic Insects.
3. Mr. T. Morton: Skippers and Brown Butterflies taken from Barrington Top Plateau and some related sub-species from New Guinea.

COUNTRY MEMBERSHIP

It was decided at the general meeting to increase the membership fees of Country Members from $1.00 to $2.00 at the next Society's Financial Year.

HONORARY LIBRARIAN

With the accumulation of magazines and newsletters from various organizations, it was felt necessary to create the position of Honorary Librarian within the Society, who would take care of this material and act as a liaison between members who wish to borrow material. Borrowed matter shall be on loan for two months.

If you wish the Society to purchase any books for the Library, or have any donations, please advise Mr. Bob. Thompson (96 2541).

RECENT ADDITIONS TO THE LIBRARY

International Code of Zoological Nomenclature, adopted by the XV International Congress of Zoology.

PUBLIC RELATIONS OFFICER

In order to encourage membership it was decided at the previous Committee meeting to appoint Mr. J. Hutchinson as Public Relations Officer. His task will be to send an introductory letter and a Journal out to various people who may be interested in joining the Society.

REPRESENTATIVE COUNCILLOR

As Mr. C. McCubbin will be unable to attend the Entomological Congress as the Society's representative, Mr. A. Nebois was chosen as his proxy.

DONATION

The Society thanked Mr. F. Hallgarten for his donation of a brass replica of a fly.

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Mr. A. Nebois has entomological boxes available from the Museum at $3.00 a box.

WANTED AT THE TIME OF THE ENTOMOLOGICAL CONGRESS

Living *Echidnaphaga gallinaceus* - Stick-fast Flea. Please contact the Hon. Miriam Rothschild, Ashton, Peterborough, England, before July 1st, or during the Congress - Miss R. Shepherd,
Keith Turnbull Research Station,
Frankston.

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'Butterflies of Australia'
Reprint of 'What Butterfly is That'
I.F.B. Common and D.F. Waterhouse.
Angus and Robertson. $25.00

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On Sunday, 2nd July, while up at Kinglake West, Jonathon Morton and I were burning gumleaves when we sighted some sawn firewood. Dad came up and said it was too green to burn. Then he saw some mistletoe on a sawn branch, so we looked a little more carefully. We found 3 larvae of the Scarce Mistletoe Blue (*Ogyris abrata*). I thought this was unusual because the Scarce Mistletoe Blue is usually not common in the mountains. Kinglake West is about 1500 ft. high. The larvae were attended by a few tiny and very slender black ants, probably a Bidomymex species.

DAVID QUICK
(Age 10)

EXHIBIT RECORDER

As it is essential that all exhibits brought to meetings are recorded, and with as much detail as possible, Mr. A. Bishop has accepted the responsibility of obtaining this information from exhibitors.

One of the primary functions of this Journal is to act as a liaison between all collectors, not only in this present time, but also for collectors of the future.

Full details of your exhibits is extremely important, and may be of unknown value to other collectors.

S. BEATTIE.

Victorian Conservation Projects

By D. F. CROSBY

As a brief introduction, conservation in Victoria involves the following bodies:

1. The Conservation Council of Victoria.
   This is composed of representatives of all the various bodies interested in nature generally, and includes the Field Naturalists' Club, the Victorian National Parks Association and the Natural Resources Conservation League, as some of the main supporters. It is a purely non-governmental body.

2. The National Parks Service.
   This is a government department responsible through its Director, Dr. L. H. Smith, to the relevant Minister.

   The Service receives advice on policy and developmental matters from an Advisory Council composed of six people, three civil servants nominated by the government and three from outside the government but selected by it from nominations submitted by the Conservation Council of Victoria.

3. The Land Conservation Council.
   This is a body set up by the government consisting of a permanent government-appointed Chairman, eight government department heads (including the Director of the National Parks Service) and three outside conservationists all selected by the government, one to represent agricultural interests, and two from recommendations from the Conservation Council of Victoria, (Professor J. Turner and Mr. John Landy).

4. Other Government Departments.
   These include the Forests Department
   Lands Department
   Soil Conservation Authority
   Fisheries and Wildlife Department
   State Rivers and Water Supply Commission

Probably one of the most important projects affecting the future use of Crown or "Public" lands and the possibility of new National Parks being declared out of them, is the survey work being carried out by the Land Conservation Council. The Council must carry out a thorough and complete scientific investigation of an area before making any

recommendations as to the balanced use of public land. The basic aim of this investigation will be to collect, collate and assess technical information about the land. Particular attention will be given to those ecological features such as soils, climate, topography, fauna and flora, which determine the usefulness of land for one purpose or another. Further, the investigations will consider the many uses of land required by the community for different purposes.

The collection of this material will be undertaken by four scientific officers of the Council, who have been allotted a study area each. In turn, these officers will have assistance from officers within the State Government departments and authorities represented on the Council.

On completion of the investigation, a report will be published setting out the results of the studies and indicating the recommendations of the Council. It is at this stage that the Land Conservation Council will receive submissions from the general public.

However, at the moment, the Council is attempting to obtain FACTUAL information on each of the four preliminary areas chosen, and the Council has asked for the help of our Society in providing the following data for each area:

1. The names of insect species of particular significance. (Their significance may be due, say, to economic importance, unusual ecology or scientific value, localized distribution, etc.).
2. A map showing the location of land on which these species are known to occur.
3. A description of the type of habitat each requires.
4. General comments on the whole of the insect population of the area. e.g. Its diversity in relation to other areas.

The first area for which information is required is in the extreme south-west of the State, enclosing a triangle whose sides are the sea, the border and a line roughly drawn from Naracoorte to Port Fairy.

As we should all be vitally interested in conserving as much as possible of the remaining undeveloped land in this State, it is felt that the Society should assist the Council. To this end I have been approached by the Council to obtain and co-ordinate this information and would therefore appreciate it if members would co-operate by supplying as much data as quickly as possible relative to the south-west area. (I would be interested to hear from anyone who has done any collecting at all in the area).

At a later date full details of the other areas being surveyed will be provided.

The author's address is 5 Russell Street, Toorak.

****

Mr. Peter Sims, a noted Tasmanian bushwalker and naturalist will present a programme entitled Tasmanian Wilderness - a two-hour film on many aspects of Tasmanian bush life.

National Herbarium. 8.00 p.m. Friday 29 Sept.

Tickets free and may be obtained by phoning Ansett Air Lines 34 0921 Ext. 1063.

****

SPECIES OF BUTTERFLIES WANTED BY THE NATIONAL MUSEUM OF VICTORIA

A. Nebois

PAPILIONIDAE

Graphium macleayanus insulana Waterhouse
" " *muggana* Couchman
Pachliopta liris liris (Godart)

PIERIDAE

Eurema blanda indecisa (Butler)
Appias celestina Boisduval
Appias albina albina Boisduval
Appias ada caria Waterhouse & Lyell
Delias mysis aestiva Butler
Delias argenthona fragalactea (Butler)
Delias ennia tindalii Joicey & Talbot
Delias nysa nivira Waterhouse & Lyell

NYMPHALIDAE

Danaus genutia alexis (Waterhouse & Lyell)
Danaus ferruginea gelanor (Waterhouse & Lyell)
Euploea alcathoe monilifera Moore
Euploea algae amycus Miskin
Euploea " *reginae* Carpenter
Euploea batesi belia Waterhouse & Lyell
Euploea climens macleari Butler
Euploea alecto nox
any other Danaids accidental to Australia.
Melanitis amabilis valentia Fruhst
Oreixenica ptunarra angeli Couchman
" " *ptunarra* Couchman

Heteronympha cordace wilsoni Burns
" " *kurena* Couchman
Polyura pyrrhus tiberius (Waterhouse)
Cupha prosope turneri Butler
Hypolimnas antilops albula Wallace
Cethosia chrysippe imperialis Butler

LIBTHEIDAE
Libythea geoffroyi genia Waterhouse
" " *nicevillei* Olliff

LYCAENIDAE
Liphrya brassolis melania Waterhouse & Lyell
Jalmenus icilius clementi Druce
" " *mitcheli* Edwards
" " form obscurus
Pseudalmenus chlorinda conara Couchman
" " *myrsilus* Doubleday & Hewitson
" " *fisheri* Tindale
Narathura micale amydon Waterhouse
Hypolycaena phorbas ingura Tindale
Virachola smilis Hewitson
Virachola democles Miskin
Ogyris amaryllis parsonsi Angel
Ogyris oroetes apiculata Quick
Ogyris zosine zolivia Waterhouse
Paralucia aenia lucida Crosby
Philiris innotatus evinculis Wind. & Clench
Philiris kamerungal lucina Waterhouse & Lyell
Philiris diana papuanus Wind. & Clench

Philiris ziska (Gross-Smith)
Holochila goodingi Tindale
Adaluma urumelia Tindale
Ionolyce helicon hyllus Waterhouse & Lyell
Hypochrysops hippuris Hewitson
Hypochrysops piceata Kerr, Macqueen & Sands
Pseudodipsas cephenes Hewitson (Waterhouse)
Zetonia delospila Waterhouse
Nacaduba pactolus cela Waterhouse & Lyell
Nacaduba kurava filsina Waterhouse & Lyell
Petralaea dana eos Waterhouse & Lyell
Catochrysops amasea Waterhouse & Lyell
Ionolycehelicon caracalla Waterhouse & Lyell
Pseudodipsas myrmecophila illidgei Waterhouse & Lyell

HESPERIIDAE
Tagiades trebellius neira Plätz
Trapezites macqueeni Kerr & Sands
Taxidia inornata Butler
Neohesperilla xanthomera Meyrick & Lower
Pasma polysema (Lower)
Taractrocera ilia ilia Waterhouse
Suniana larrakia Couchman
Oriens augustula augustula (Herrich-Schäffer)
Telicota melanion melanion (Mabille)
Borbo bevani (Moore)

THE HYMENOPTERA

R. Besserdin

ICHNEUMONIDAE

This is a very large family of wasps occurring all around Australia especially along the coastal areas. Here they parasitize mainly Lepidoprevous larvae although some have been recorded parasitizing symphytous larvae. The Ichneumons seem to be rather susceptible to desiccation in dry inland regions as they must rely on large amounts of water to survive. In such regions these wasps have been noticed to survive off tiny dew droplets which they obtain from the leaves of plants or on blades of grass early in the morning. As a result of this requirement these wasps are in abundance along streams and a great variety of species are very plentiful all along the humid coastal areas.

They seem to be a highly successful family ranging from very large to small wasps, the smallest being approximately 6 mm. The larva of this family may be either ectoparasites or endoparasite and are generally white or creamy in colour and ellipsoid in shape. Specimens of these wasps may be found all year round but are most common during late summer and autumn.

BRACONIDAE

Unfortunately little is known about this widely-spread family; large numbers are un-named and there are possibly many not yet discovered. Since these small wasps are closely related to the ichneumons many also share similar habits. Most of these wasps are parasitic on Lepidopterous larvae, symphytous larvae and even the tiny Chaloids. Braconida, prior to pupating leave the host remains, and in groups find shelter (usually under bark), where they spin cocoons and pupate. Most specimens are white, black and red with clear dark wings and relatively small in size; there is however a sub-family, the *Exothecinae*, which are large orange and black wasps with brightly infuscated wings. These wasps are distinguished from the ichneumons fundamentally by the single recurrent vein in the forewing; ichneumons generally have two. Braconids are found over most of Australia and more abundantly in the more humid areas; however they can stand dryness far better than can ichneumons and therefore are also quite plentiful inland.

POMPILIDAE

This well-known family contains the large brightly coloured spider-hunter wasps. Much is known about individual species and their habit of parasitizing spiders. All species are spider parasitizers, but almost all individual species have different habitats and habits. Probably the most common is *Crytocheilus* which prey on the Sparrosids that the female seeks out under bark, paralyses and carries back to her burrow over the ground. Because these wasps are so well adapted to their burrowing habits, their pronotum is therefore larger than normal wasps, and this becomes a handicap in flight. These wasps however are very agile and are constantly in motion running quickly over the ground or on tree-trunks in search for prey. After the prey has been caught and paralysed some wasps may nibble the legs off before carting the large body over the ground back to the nest. Other wasps may carry the whole body back to their burrow. Usually when a spider's leg is broken off, after some time, a thin membrane forms over the wound and in time a new leg will grow there. This is the reason why a legless host spider does not die until the wasp larvae have fed on it. After digging a burrow in the sand or soft earth, the wasp makes some circling flights around it, and as she does, she takes note of various objects within a four-foot radius of the burrow before she leaves to find her prey. These landmarks will help her to recognize the burrow when she returns. It appears that one female may run more than one burrow at a time. Species are found all over Australia, mostly in coastal regions where prey is plentiful. Sizes range from very large (30 mm) to small (8 mm) and are mainly brightly coloured, although some are black and grey with brightly infuscated wings.

Interesting Literature for Entomologists

By D. F. CROSBY

1. "Naming the Living World" by Theodore Savory. (E.U.P. London). 1962. Octavo. pp. 128.

   This is a very useful little book setting out the principles and practice of taxonomy. It can be used in conjunction with the next book but most of the common technical terms are explained in detail. It covers all living organisms, not just animals. (Obtained from E.W. Classey).

2. "International Code of Zoological Nomenclature" - published by the International Trust for Zoological Nomenclature, London. 1961. pp. i - xvii, 176 Octavo. This is a necessity for serious taxonomic work, but much simpler to follow if the book by Savory has been studied. (Obtained from the Trust).

3. "The Generic Names of the Butterflies and their Type Species" - Francis Hemming. Bulletin of the British Museum (Natural History) - Entomology. Supplement 9. London 1967. p.509 Octavo. An essential authoratative treatise for all butterfly taxonomists. (From the Museum £8.00).

4. "Butterflies of New Zealand" - W.B.R. Laidlaw. Collins. 1970. Quarto. pp. 48 - A handy book for those interested in the butterflies of New Zealand. All insects are illustrated by colour paintings of fair quality. A reasonable amount of biological data is provided. (From Classey £1.40).

5. "Butterflies of the Genus Vanessa and of the Resurrected Genera Bassaris and Cynthia", William D. Field. Smithsonian Contributions to Zoology No. 84. 1971. Octavo. pp. 105. - Revision of World Species, including the two Australian representatives. (From Smithsonian Institution Press, City of Washington, U.S. $1.50).

6. "The Monarch Butterfly", F.A. Urquhait. University of Toronto Press. 1960. Octavo. pp. i-xxiv, 361. A fascinating book delving into the life of this famous insect. (From Classy £5.20).

7. Some recent scientific papers -

(a) Nitikin, M.I. "Butterflies of the County of Cumberland with Special Reference to Cabramatta N.S.W.
J. Ent. Soc. Aust. (N.S.W.) No. 7. (1970). p. 44.

(b) Nitikin, M.I. "List of Butterflies Collected in the County of Cumberland, 1957-1963. ibid. 1. (1964). p. 45.

(c) Smithers, C.N. "Observations on Lord Howe Island Butterflies".
Aust. Zool. xv (3). 1970. p. 380.

(d) Peters, J.V. "Notes on the Distribution of Australian Hesperioidea and Papilionoidea (Lepidoptera).
ibid. xv (2). 1969. p. 178.

(e) Smithers, C.N. and Peters, J.V. "The Butterflies of Norfolk, Philip and Nepean Islands, ibid.

(f) Smithers, C.N. "A note on migrations of *Vanessa kershawi* (McCoy) (Lepidoptera : Nymphalidae) in Australia. 1963-1968."
ibid.

(g) Tite, G.E. "A Revision of the genus *Anthene* from the Oriental Region (Lepidoptera : Lycaenidae)".
Bull B.M. (N.H.) ENTO. Vol. 18. No. 8.

(h) Eliot, J.N. "An analysis of the Eurasian and Australian Neptini (Lepidoptera : Nymphalidae)".
Bull B.M. (N.H.) ENTO. Suppl. 15. 1969.

(i) Rose, A. "Butterflies observed in Kuringai-Chase National Park, New South Wales". Proc. Roy. Zool. Soc. N.S.W.
1968/69. (1970). p. 48.

(j) Smithers, C.N. "A note on the seasonal occurrence of some Norfolk Island Butterflies". ibid. p. 46.

(k) Haines, L.C. "The occurrence of *Danis hymetus taygetus* (Felder) at Bayview, New South Wales".
ibid. 1967/68 (1969). p. 62.

(l) Peters, J.V. "The butterflies of Lord Howe Island".
ibid. p.63.

(m) Ehrlich, P.R. "The Comparative Morphology, Phylogeny and Higher Classification of the Butterflies (Lepidoptera : Papilioidea). Univ. Kansas Sci. Bull. xxxix (8) 1958. p. 305.

8. Peters, J.V. "A catologue of the Type Specimens of the Hesperioidea and Papilionoidea (Lepidoptera) in the Australian Museum". Aust. Entomological Press, Sydney 1971. Quarto. pp. 36. (Publishers).

9. Smithers, C.N. "Norfolk Island Butterflies". Aust. Entomological Press, Sydney. 1970. Octavo. pp. 24. (Publishers).

10. Deger, D. & Eden, R. "Collecting Australian Butterflies". Horowitz Publications, Sydney. 1970. pp. 50. Small Octavo.

Note: I have found the best supplier of entomological literature to be:

E. W. CLASSEY LTD.,
353 Hanworth Road,
Hampton. Middlesex. England.

If you are interested, I would suggest you ask him to put you on his mailing list for catalogues. He will also get any special requests for you fairly quickly.

GALL INSECTS

P. Kelly

Many insects that feed on plant tissue form galls. The gall is entirely a product of the plant and develops in response to chemical stimulants from the secretions of the insect. Galls may occur in leaves, stems, flowers or roots, but each species of gall insect produces a characteristic gall on a certain part of a particular type of plant. The stimulus to the formation of the gall is usually produced by the feeding stage of the insect; in a few cases the ovipositing adult female produces the stimulus when she lays her eggs into the plant.

Each gall may harbor one or many gall insects. A gall may have an opening to the outside, for example Hemiptera and Mites, or they may be entirely enclosed galls of larval insects. Six orders of insects contain gall-making species.....

Diptera	flies
Hymenoptera	wasps
Coleoptera	beetles
Lepidoptera	moths
Thysanoptera	thrips
Homoptera	aphids, psyllids and coccids

Other plant galls are caused by mites, roundworms and fungi. In addition some species of Diptera and Hymenoptera are parasites on gall insects and some are inquelines. The larvae of many small Lepidoptera are gall feeders or gall tunnelers. Many galls on the leaves and muds of eucalypts are caused by a symbiotic association of nematoda and the larvae of small flies of the genus Fergusonia.

The following is a list of all families known to contain gall making or gall inhabiting species. Some of these families may consist almost entirely of such species,while others may have only one or two, the other species of the family not being associated with galls.

GALL MAKERS

COLEOPTERA Beetles

FAMILY:	*Buprestidae*	Species of genera *Paracephala* and *Ethon*
FAMILY:	*Chrysomelidae*	Some *Halticinae* (Flea Beetles)
FAMILY:	*Anthribidae*	Feed in existing galls?

DIPTERA Flies

FAMILY:	*Cecidomyiidae*	Gall Midges or Gall Gnats
FAMILY:	*Agromyzidae*	
FAMILY:	*Fergusoninidae*	In association with Nematodes

HEMIPTERA

FAMILY:	*Eriococidae*	Gall-forming Coccids
FAMILY:	*Aphididae*	Aphids
FAMILY:	*Psyllidae*	Lerps

LEPIDOPTERA

FAMILY:	*Cosmopterigidae*
FAMILY:	*Alucitidae*

THYSANOPTERA Thrips

FAMILY:	*Phlaeothripidae*	Genera...	*Thaumatothrips*	galls on Casuarina
			Eugymothrips	galls on Smilax
			Kladothrips	galls on Acacia
			Choleothrips	galls on Geijera

HYMENOPTERA Wasps

FAMILY:	*Cynipinae*		
FAMILY:	*Ichneumonidae*		
FAMILY:	*Eulophidae*	)	
FAMILY:	*Eurytomidae*	)	
FAMILY:	*Torymidae*	)	*Chalcidoidea*
FAMILY:	*Pterohalidae*	)	
FAMILY:	*Encyrtidae*	)	

INQUELINES and PARASITES

DIPTERA Flies

FAMILY: *Cecidomyiidae* Gall Midges or Gall Gnats
Some are true gall makers, some are parasites and others are simply inquelines on other gall insects.

HYMENOPTERA Wasps

FAMILY:	*Ichneumonidae*	FAMILY:	*Eulophidae*
FAMILY:	*Brachonidae*	FAMILY:	*Platygasteridae*
FAMILY:	*Cynipidae*	FAMILY:	*Torymidae*
FAMILY:	*Eurytomidae*		

GALL TUNNELING MOTHS

FAMILY:	*Tortricidae*	FAMILY:	*Oecophoeidae*
FAMILY:	*Stathmopidae*	FAMILY:	*Gelechiidae*
FAMILY:	*Lyometiidae*	FAMILY:	*Carposinidae*
FAMILY:	*Gracillariidae*	FAMILY:	*Pyracidae*
FAMILY:	*Aegeriidae*		

The following article was reprinted by the courtesy of the Latrobe Valley Field Naturalist Club and with the permission of the author.

THE GOLDEN BROWN BUTTERFLIES OF SOUTH-EASTERN AUSTRALIA
(And especially of Gippsland and the Victorian Dividing Range)

These lovely Butterflies, Sub-Family *Satyrinae*, contain all the rich golden brown species with numerous ocelli (eye-like spots), and various black markings which so enliven our forest lands, hillsides and fern gullies. The headquarters of the family is south-eastern Australia, with the greater number of species in Gippsland, and the mountain valleys and peaks of the main Victorian Dividing Range.

There are also interesting species in south Western Australia, and in Tasmania, where some unique, and archaic species are to be found. These lovely butterflies always begin to appear in late Spring, through Summer and Autumn, and are a never ending pleasure to Naturalists on outings through the bushland and fern gullies. The larva of all of them (with one exception) feed upon various native grasses, feeding in the early part of the night and hiding during the day time. The larva are green, rarely some shade of brown, and when found in the day time always appear sluggish, but become active as night approaches, when they begin to feed on the blades of the grasses.

The pupa of most of the species is a very beautiful object, and is generally suspended from the food plant, but in some species it is loose and found under sticks or in a frail network beside stones or at the roots of herbage. The pupa is not hard to find by an experienced Naturalist at the proper season for the species concerned.

The butterflies of the *Satyrinae* sub-Family are mostly of medium size, but many small, dainty and beautiful species are found, both in Australia and in other countries. One of the chief characteristics of them is that they have one or more of the principal veins very much swollen near the base of their wings, the one exception being that of the genus *Melanitis*, a fine large showy species which is found from about Port Macquarie to Cape York. There is a most beautiful pattern of silver-white bands, and spots, with other marks on the underside of the hindwing, as well as ocelli on both wings, those on the underside being artistically ringed - on a number of the species. They are shade loving insects, but can often be seen visiting flowers and sipping the nectar. When the eucalypts are in heavy blossom, I have often seen and watched hundreds of *Satyrinae* of several species feeding on the nectar.

They mostly frequent long grass, undergrowth, wooded gullies and dense forest, but most of them in very hot weather prefer cool shady places. Their flight is irregular and weak, and this is designed to give them added protection from birds of prey. This irregular flight has, however, a very disconcerting effect on both the bird of prey and the collector.

Satyrinae butterflies are very regular at the time of their appearance - indeed they are so very much so that it is almost possible to tell the time of the month from the first butterflies seen in the season. Most of the species are single brooded, but a few, like the genus *Tisiphone*, *Argynnina* and *Melanitis* are double brooded.

The colours of the undersides of many species are so beautifully variegated and tinted that when they settle on the ground amongst debris and dead leaves, it is almost impossible to see them. Nature has endowed them with wonderful camouflage which they are very quick to use to the best possible advantage.

Species of the sub-Family *Satyrinae* are found all over the world, but are much more abundant at the higher altitudes, and are more numerous in individuals and species in temperate regions than in the tropics. South-eastern Australia (especially Gippsland) is very rich in species - this region has quite a number of very fine ones, some of which are quite rare, and have to be searched for very deligently, several fine species being found only on the highest mountain ranges.

Heteronympha solandri, the Great Golden Heteronympha, is one species in particular that is found only at an altitude of from 4,000 to 5,000 feet. There are also several species of the genus *Oriexenica*, very showy little butterflies, which are to be found at a similar elevation during Summer and Autumn. The species of south-eastern Australia are unique and showy, and have no relatives anywhere else in the world. They do however show some affinity to butterflies of the south of South America, and this shows that they are very old, and of archaic origin, possessing a great and most interesting antiquity.

The eggs of our *Satyrinae* are sometimes very beautiful, being usually of various shades of green, roughly spherical with a flattened base, and are finely and delicately ribbed. The young larva, on hatching, are green and hairy with large black heads, but as they grow to maturity quickly assume the characteristics of the true *Satyrinae*, but most of them still retain their green colour. The heads provide very good characteristics for the separation of the different species,

they are easily reared in captivity on any good soft native grass - they all feed at night and hide during the day.

One of the species of *Satyrinae* (*Tisiphone abeona*), is one of the most remarkable butterflies in the world - it ranges from the Maroochy River in Queensland right through coastal Eastern Australia, down through Wilson's Promontory to Mount Gambier in South Australia. Throughout its wide range it has produced eight well defined sub-species, some of which are extremely beautiful. It is somewhat difficult to convince overseas entomologists that all these eight are but one species. The Gippsland sub-species is *Tisiphone abeona albifascia*. Much has been written about the sub-family *Satyrinae* by the late Dr. G. A. Waterhouse, who successfully paired and crossed all these races through several generations, many thousands of specimens being involved. The story is too long to deal with here. It can be studied in papers written in 'The Proceedings of the Linnean Society of N.S.W. 1922 - 1923' and in 'The Australian Zoologist, 1928'.

As the life history of all the races is the same, a brief description here of one race is sufficient. The egg is green or bluish green, nearly spherical and slightly roughened, the young larva is green and has a shining black head with paler longitudinal lines, and covered with minute white dots and very short white hair. The pupa is bright green with wing cases outlined in bright yellow, and suspended head downwards by the cremaster. The food plant of the larva is *Gahnia psittacorum*, one of the Sword Grass plants.

During my long experience of over 50 years in the bush as a Naturalist I have often studied butterfly behaviour. This is most essential for it is only by watching the butterflies at play - chasing each other through the shafts of sunlight that filter down from the high eucalypts, that we can obtain an adequate appreciation of the habits and other characteristics of the many species. While watching the butterflies at play from a good vantage point I have often recalled the beautiful lines from Haworth by Scudder:-

"Marok, while he moves amid the sunny beam,
O'er his soft wings to varying lustres gleam.
Launched into air, on purple plumes he soars,
Gay Nature's face with wanton glance explores;
Proud of his varying beauties, wings his way,
And spoils the fairest flowers, himself more fair then they".

C.G.L. Gooding
(Warragul F.N.C.)

VICTORIAN ENTOMOLOGIST

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Category B-

THE ENTOMOLOGICAL SOCIETY VICTORIA

OBJECTS

(a) To stimulate the scientific study and discussion of entomology in all its aspects.
(b) To gather, preserve and disseminate knowledge of Australian species of insects.
(c) To compile a list of known species of Victorian insects.
(d) To bring together in a social and scientific atmosphere all persons interested in entomology.

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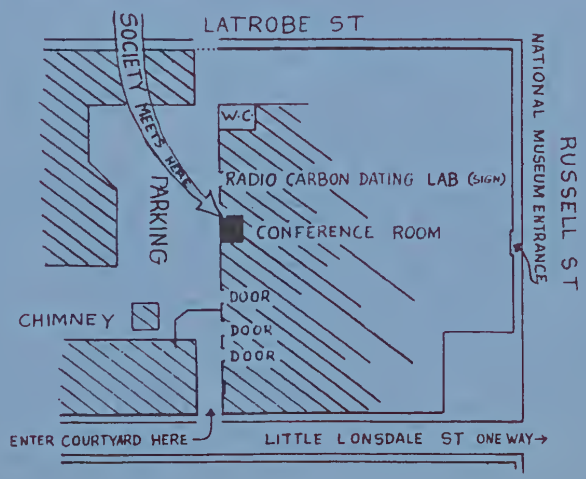
MEMBERSHIP

Open to all persons interested in entomology. Applications or enquiries re membership should be addressed to the Hon. Secretary.

MEETINGS

The Society's meetings are held in the Conference Room at the National Museum (see inset). Meetings start at 8 p.m. sharp on the second last Friday of alternate months commencing with the annual general meeting in February. Visitors are always welcome.



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ENTOMOLOGICAL SOCIETY of VICTORIA

Office Bearers

Deputy President: Mr. J. C. LeSouef, Godfrey St., Blairgowrie. Vic. 3942. (059.888413).

Vice-President: Mr. A. Morton, 15 Eilleen Street, Armadale. 3143.

Hon. Secretary: Miss S. Beattie, 2 Clyde St., Glen Iris. 3146. (50 5263).

Hon. Editor: Mr. A. Bishop, 5 Warnes Road, Mitcham. 3132. (874 6119).

Hon. Treasurer: Mr. R. Condron, 96 Shannon St., Box Hill Nth. 3129.

Immediate Past-President: Mr. P.Kelly

Diary of Coming Events

Friday, October 20, 1972.

General Meeting - 'Suggan Buggan'. Speaker: Miss. Susan Beattie.

December 15, 1972 (Third Friday of the month)

Members night.

December 26 - January 1, Excursion to Suggan Buggan.

REPORTS AND NOTICES

General Meeting: Friday, August 18th, 1972.

Mr. J. LeSouef chaired the meeting in the absence of the President and Vice-President, which was attended by 43 members and friends. Apologies were received from Messrs. Hall, Hallgarten, Morton, Neboiss, Holmes, Crosby and Miss Matherson.

The Minutes of the previous meeting were read and confirmed.

The Society welcomed the return of Mr. & Mrs. Le Souef from their recent trip and Mr. G. Burns after his recent illness and Mr. Greg Daniels a visiting entomologist from Sydney.

Correspondence was received from:

1. Entomological Soc. of Q'land, News Bulletin, No. 88, Aug. '72.
2. Australian Entomological Mag. Vol. 1, Pt. 1. July 1972.
3. Resignation of Membership of Mr. P. Jacklin, dated 21.8.72.
4. International Congress of Entomology, 17 July, advising that arrangements could be made to publicise the Society at the Canberra Congress.
5. T.I.E.G. Membership List. Jan. 1972. T.I.E.G. Journal Vol. 6, No. 4, 1971. Vol. 7, No. 1. Spring 1972.
6. 'Save the Kangaroo Committee' informing of their city march 16 Sept. 1972.
7. Mr. David Boucher, 18 Old Market Place, Harleston, Norfolk. England, wishing to obtain cocoons of *Coscinocera hercules*.
8. Peninsula Conservation League, August 1972.

Exhibits:

Glynn McConnell: Butterflies from Beaumaris and Dunk Island.

Mr. J. C. LeSouef Coleoptera from Cooktown and Tinaroo including the first record of *Phalacrognathus muelleri* Macl. (*Lucanidae*) - Golden Resplendant Beetle - from Cooktown.

New Members: To be elected at the next General Meeting.

1. Mr. & Mrs. A. Walford-Huggins, P.O. Box 169, Cairns. Nth. Q'land.
2. Mr. D. Drake, 5 Fortesque St., Nth. Bexley. N.S.W. 2207.
3. Mstr. J. Robinson, 5 Alimar Rd., Glen Waverley. Vic. 3150.
4. Mstr, Stephen Smith, 29 Gillard St., Burwood. Vic. 3125.
5. Mstr. Neil Shaw, 16 Douglas Ave., Box Hill Sth. Vic. 3128.
6. Mr. G.B. Monteith, Dept. of Entom. Univ. of Q'land. St. Lucia. Q'ld. 4067.
7. Miss Helen Malcolm, 11/1 Arthur St., South Yarra. Vic. 3141.
8. Mr. Leigh Winsor, 8/4 Rathmines St., Fairfield. 3078.

The Speaker

for the evening was Dr. Brian Smith. After explaining in detail the method of grid division for faunal study Dr. Smith went on to speak on his study of non-marine molluscs which he is undertaking to determine their distribution and classification.

A summary of the method of grid mapping follows on page 8.

General Business:

1. Treasurers Report:

Mr. R. Condron reported that the Society's membership stood at 60 members and the financial standing was $50.00.

2. Public Relations Officer Report:

Mr. J. Hutchinson reported that a display plaque and a membership form had been designed to advertise the Society. These will be on display at the International Entomological Congress in Canberra, and the membership forms shall be available at the Museum.

3. Excursions Secretary's Report:

Mr. N. Quick distributed circulars on the coming trip to Waratah Bay.

1972 Excursions: Big Desert.
Dec. 26 - Jan 1, 1973 - Suggan Buggan.
For further details contact N. Quick (560 8145).

4. Editors Report:

Mr. Ray Besserdin was thanked for the work he did as Editor before standing down. His position has been taken up by Mr. A. Bishop who stated his concern over the lack of articles and the number of articles written on butterflies only.

5. Vote of Thanks:

A vote of thanks was extended to Mr. Tom Greaves, who has donated to the Society a series of reprints on Termites which he wrote whilst working in Canberra with the C.S.I.R.O. on the Termite research programme. These reprints shall be kept in the Library.

6. 1973 Meeting Place:

As the Conference Room at the Museum is becoming more overcrowded each month due to the increasing membership and attendance, it was proposed by the Secretary to hold meetings in 1973 at the Clunies Ross House, National Science Centre, 191 Royal Pde., Parkville.

The Society is entitled to 10 general meeting dates, and 10 Committee dates per year, with seating accommodation of 75-500 places.

The Society shall continue to meet on the second last Friday of every second month from 8.00 - 11.00 p.m.

The decision to meet at this new location was passed unanimously.

Miscellaneous:

Mr. A. Neboiss acting as a convenor, has insect boxes, and reprints on insects available.

MATTERS DISCUSSED AT THE PUBLICATION MEETING (3.9.72.)

1. General layout of format of the Journal.
2. That authors' addresses be included with articles, to be discussed at the next General Meeting.
3. That reports of Publication and General Committee meetings be included in the Journal.
4. That Instructions to Authors be sent to new members.
5. That an issue of the Journal be sent to any non-member who has contributed an article.
6. The next volume of the Journal, in 1973, shall be numbered consecutively throughout the year.
7. An index shall appear at the end of each volume of the 'Victorian Entomologist'.

MATTERS DISCUSSED AT THE COMMITTEE MEETING (24.9.72.)

1. As Mr. C. McCubbin, our President, is at present in England, Mr. J. LeSouef will act as Deputy-President until the end of the year.
2. Mr. A. Bishop was elected 'Grid Survey Secretary'. Working in conjunction with the Museum, Mr.Bishop shall collate data supplied by members to help determine distribution of insect species throughout Victoria.

3. To prevent mismanagement of the Society in the future and to ensure its efficient progress it was decided to draw up rules of management.

4. It was decided to organize a suitable display for the 1973 Nature Show, largely to advertize the Society.

5. Prices for metal badges, car stickers were discussed.

FINANCIAL MEMBERS FOR 1972

Mr. John Alderson, 32 Longs Rd., Lower Plenty. Vic. 3093.

Mr. Andrew Atkins, 2 Brake Ave., Frenchville. Nth.Rockhampton. Q'ld. 4701.

Mr. John Barnes, 42 Lucknow St., Mitcham. Vic. 3132. *Diptera*

Miss Linda Barraclough, 1 Xavier Ave., Hawthorn. Vic. 3122.

Miss Susan Beattie, 2 Clyde St., Glen Iris. Vic. 3146. *Coleoptera, Buprestidae*

Mr. Ray Besserdin, 35 Quinn St., Heidelberg. Vic. 3084. *Hymenoptera*

Mr. Dennis Black, 3 Eyre Crt., Lower Templestowe. Vic. 3107.

Mr. Anthony Bishop, 5 Warnes Rd., Mitcham. Vic. 3132. *Lepidoptera. Collembola.*

Mr. & Mrs. Gordon Burns, 3 Inglis St., Mornington. Vic. 3931. *Coleoptera.*

Mr. Robert Condron, 93 Shannon St., Box Hill Nth. Vic. 3129. *Lepidoptera.*

Mstr. Steven Condron, 93 Shannon St., Box Hill Nth. Vic. 3129.

Mr. Mark Connor, 34 Gloucester St., Reservoir. Vic. 3073. *Lepidoptera.*

Mr. David Crosby, 7 Russell St., Toorak. Vic. 3142. *Australian Rhopalocera*

Mr. W. Delaney, 73 Park Rd., Cheltenham. Vic. 3192.

Mr. Randal Delaney, 73 Park Rd., Cheltenham. Vic. 3192.

Mr. Nigel Delaney, 73 Park Rd., Cheltenham. Vic. 3192.

Mr. D. Drake, 5 Fortesque St., Nth. Bexley. N.S.W. 2201. *Lepidoptera.*

Mr. Mike Durkin, 7 Avondale Gve., Mt. Waverley. Vic. 3149.

Mr. Paul Frank, 15 Canberra Gve., Beaumaris. Vic. 3193.

Mr. Fred Hallgarten, 6 Park St., Pascoe Vale. Vic. 3044. *General Entomology*

Mr. John Hallgarten, 6 Park St., Pascoe Vale. Vic. 3044.

Mr. David Holmes, 'Holmden', Red Hill. Vic. 3937. *Lepidoptera & Coleoptera*

Mr. Pete Hulbury, 3 Coorie Cres., Rosanna. Vic. 3084.

Mr. James Hutchinson, 24 Junction Rd., Blackburn Nth. Vic. 3130. *Lepidoptera. Odonata.*

Mr. Peter Kelly, 260 The Boulevard, East Ivanhoe. Vic. 3079. *Coleoptera*

Mr. & Mrs.Cecil LeSouef, Godfrey St., Blairgowrie. Vic. 3942. *Lepidoptera and Coleoptera*

Mr. Nick LeSouef, C/- Godfrey St., Blairgowrie. Vic. 3942.

Mr. Peter Lillywhite, 9 White St., Mt. Waverley. Vic. 3149. *Lepidoptera*

Miss Helen Malcolm, 11/1 Arthur St., South Yarra. Vic. 3141. *General Entomology*

Mr. Ray Manskie, 8 Smith Rd., Springvale Nth. Vic. 3170. *Lepidoptera Lycaenidae*

Miss E. Matherson, C/- Entom. Div., Nat. Museum, Russell St., Melbourne. Vic. 3000.

Mr. Glynn McConnell, 22 Reid St., Beaumaris. Vic. 3193.

Mr. Charles McCubbin, 6 Manniche Ave., Box Hill Nth. Vic. 3129. *Lepidoptera*

Mr. Shane McEvey, 5 Gissing St., Blackburn Nth. Vic. 3130.

Miss Susan Meier, 73 Grey St., East Melbourne. Vic. 3002.

Mr.G.B.Monteith,Dept.of Entomology, Univ. of Q'land. St.Lucia. Q'ld. 4067. *Hemiptera and Coleoptera*

Mr. Anthony Morton, 15 Eileen St., Armadale. Vic. 3143. *Lepidoptera*

Mr. Malcolm Moss, P.O. Box 2807 AA, Melbourne. Vic. 3000. *Diptera*

Mr. Max Moulds, 14 Chisholm St., Greenwich. N.S.W. 2065.

Mr. Arthurs Neboiss, C/- Entom.Div., Nat. Museum, Russell St., Melbourne. *Elateridae. General Entomology.*

Mr. Brian O'Neill, 327 Francis St., Yarraville. Vic. 3013. *Lepidoptera.*

Mr. Wayne O'Neill, 327 Francis St., Yarraville. Vic. 3013.

Mr. J. Ozols, 6 Dunlop St., Maribyrnong. Vic. 3032. *General entomology.*

Mr. Richard Pound, 21 Miriam St., Rosanna. Vic. 3084. *Formicidae.*

Mr. David Quick, 20 Alimar Rd., Glen Waverley. Vic. 3151.

Mr. Nigel Quick, 20 Alimar Rd., Glen Waverley. Vic. 3151. *Lepidoptera (Rhopalocera)*

Mr. Grant Richard, 25 Norwood St., Sunshine. Vic. 3020.

Mstr. James, Robinson, 5 Alimar Rd., Glen Waverley. Vic. 3150.

Mr. Otto Rogge, 22 Arthur St., East Coburg. Vic. 3058. *Hymenoptera.*

Mstr. Neil Shaw, 16 Douglas Ave., Box Hill South. Vic. 3128. *Coleoptera.*

Mstr. Stephen Smith, 29 Gillard St., Burwood. Vic. 3125. *Coleoptera*

Mr. & Mrs. John Strong, Flat 11, Palm Crt., 1160 Dandenong Road, Murrumbeena. Vic. 3163.

Mr. & Mrs. Robert Thompson, Flat 3, 5 Foote St., Elwood. Vic. 3184. *Coleoptera.*

Victorian Plant Research, Chief Biologist, Swan St., Burnley. Vic. 3121.

Mr. John Wainer, 14 Ocean St., Hampton. Vic. 3188.

Mr. & Mrs. Allan Walford-Huggins, 'Kamerunga Biol. Labs', P.O. Box 169, Cairns. Nth.Q'land. 4870.

Mr. Clyde Wild, 22 Cassinia Ave., Ashwood. Vic. 3147.

Mr. Peter Williams, 163 Rachardson St., Nth. Carlton. Vic. 3054. *Coleoptera*

Mr. Leigh Winsor, 8/4 Rathmines St., Fairfield. Vic. 3078. *Siphonaptera.*

Exchange and Complimentary Membership:

Victorian Fisheries & Wildlife Library, 123 Brown St, Heidelberg.Vic.3084.

Victorian State Library, Swanston St., Melbourne. Vic. 3000.

Teen International Entomological Group, 315 Plant Science Building, Cornell Univ. Ithaca. N.Y. U.S.A. 14850.

CSIRO Dept. of Entomology, (Austn.Entom.Soc.) P.O. Box 109, Canberra City. A.C.T. 2601.

G.P.O. Melbourne Royal Mail House, 255 Bourke St., Melbourne. Vic. 3000.

Entomological Society of Australia, Box 22, Five Dock, N.S.W. 2046.

Victorian National Museum Library, 285 Russell St., Melbourne.Vic. 3000.

National Library of Australia, Preparation Branch, Canberra. A.C.T. 2600.

Honorary Member:

Mr. Tom Greaves, 71 Coranderrk St., Reid. Canberra City. A.C.T. 2601. *Forest Research.*

GRID MAPPING FOR FAUNAL SURVEYS

by

Brian J. Smith
Curator of Invertebrates, National Museum of Victoria

The only realistic way to carry out a systematic survey of the fauna of any given area is to sub-divide the area into "manageable" pieces. These must be small enough to enable the results to be a true reflection of the actual distribution of the animal being studied, and large enough to enable the area to be covered thoroughly in a reasonable time. Thus faunal surveys are always a compromise between scientific accuracy and practical feasibility.

The subdivision of the area can be carried out using any criteria which serve the purpose best. Some old surveys in Britain were based on the political boundaries of county, vice-county or parish, but the mapping of the distribution of wild animals on such irregular areas gave rise to some very peculiar distribution records. Far better is the regular geometrical grid, dividing the area into a series of exactly similar, and therefore more or less comparable, rectangles or squares. Using such a system an accurate indication of the animals distribution is easily seen as a mark in each square in which the animal is found quickly gives a "dot-map" of the animals distribution. The size of the grid to be used depends on the size of the area to be surveyed because of the criterion of practical feasibility. Clearly the grid needed to survey the distribution of an animal in a National Park would be vastly different from the grid needed to survey the distribution of the same animal throughout Victoria. Yet both these surveys should give an accurate picture of the animals distribution in the two areas.

In Europe several large surveys are under way using a distance-based grid unit, giving grid squares of exactly equal areas over vast regions. Thus the European Invertebrate Survey with joint headquarters in Belgium and Britain are surveying many invertebrate groups all over Europe on a 50 km grid; while many individual countries are doing national surveys using a 10 km grid. The advantage of this system is that the grid squares over the whole area of survey have exactly the same areas and thus results are easily compared. However the system suffers from two big drawbacks. Firstly it is tedious to transfer data from one scale map to another as the grid is based on distance and not angular measurement. Secondly, because of the curvature of the earth a linear grid requires "zones of compensation" every so often to allow the curved surface to be represented by a flat picture. These can be avoided over a small area but in large areas, these zones make mapping very difficult.

The other main grid base available, and this is the one in use in Victoria, is the one based on angular measurement (degrees and minutes). The International Biological Programme uses a grid of one degree of latitude by one and a half degrees of longitude, which is exactly equal to one large sheet of 1:250,000 sheet maps. These large divisions can then be divided into 54, 10 minute squares. However, because they are based on angular measurement, they are not square and their areas differ fractionally from place to place. In Victoria each of the 10 minute squares measures approximately 9 miles by 11 miles or 14 km x 18 km. However they can be easily located on maps of any scale and they relate directly to ground measurements. It is this method of grid mapping which is being used at present by the botanists in a botanical survey in Victoria and by me in a survey of non-marine molluscs in Victoria.

In this non-marine mollusc survey I am using a four digit code to designate the grid square of each specimen that comes in. The first two digits nominate the large square, while the last two digits nominate from which 10 minute square within the big square the specimen comes. For example a specimen from within the City of Melbourne would carry the number 2042, meaning that it is on large square 20 and in small square 42 of that square.

At the end of this survey, in several years time, it is hoped to produce a dot distribution map for each species of non-marine mollusc in Victoria which should be an invaluable tool in further work on the taxonomy and ecology of the molluscs in the State.

THE LIFE HISTORY, AND NOTES, AND OBSERVATIONS OF THE RARE AUSTRALIAN "CANNIBALISTIC" BUTTERFLY - PSEUDODIPSAS CUPREA SANDS 1964*
FAMILY, *LYCAENIDAE* : GENUS, *PSEUDODIPSAS*.

It was my intention in 1960-61 to name, and describe, and give the complete life-history for the first time, of this new and rare butterfly, Pseudodipsas cuprea.

I was waiting at that time for the return from overseas of an old friend, who had promised to help with the photography and the text.

In 1964 I was forstalled, and the butterfly was named, and described, and called *Pseudodipsas cuprea*, but nothing else concerning it was published.

I propose in the notes to publish for the first time, the complete life-history, from the egg to the adult butterfly, of one of the Worlds most fascinating butterflies.

We will begin by giving a brief technical description first, this will be followed by notes and observations kept and put together since the summer of 1917.

Butterfly - Male, forewing with termen very slightly arched, dark brown, basal areas rich coppery which extends to tornus.
Hind-wing somewhat square dark brown with rock coppery basal areas, two dark spots near tornus, and cilia white.

Butterfly - Female, with coppery areas replaced by blue, and wings more rounded.

Butterfly - Underside, light brown, with a pattern of brown bands peculiar to the genus, and spots edged with dark brown, tornus with black spots corresponding with upper surface.

Egg - of the usual *Lycaenidae* type, rough, and finely pitted, and when fresh pearly white, changing to greyish a few hours after being laid.

Larva - of the usual *Lycaenidae* type, onisciform, but being longer than most *Lycaenidae* larva and very active.
Colour, can best be described as being between a cream, and putty shade, head black, and shield behind head brown.
Each segment has several brown dots, and from each dot, a short stout hair, with a number of shorter hairs over rest of body.

Pupa - dull black, smooth, and much longer, and more slender, than most Lycaenidae pupa.

This technical description, has been purposely kept to a minimum.

Notes, and observations recorded since the summer of 1917.

It was on December 15th, 1917, when many miles out in the bush, and watching for bush-fires, that I first found this rare species of butterfly.

I drove my axe into a dry stumy to have a short spell from the oppresive heat of bush fires, when I noticed two butterflies on the side of the stump, these two specimens, both females are still in my collection. The butterflies were quite, and allowed me to take them off with my fingers, the stump was swarming with ants of the *Iridomyrmex* genus.

I opened one side of the stump with my axe, and saw two larva which I could not recognize, I strapped the stump together with a piece of wire, intending to come back to it later.

Bush-fires, are mighty masters, and there were sterner things to attend to that day, beside collecting butterflies. The area was completely burnt out the following day, so I had to make a fresh start to find the butterfly again.

I learnt enough of that particular area, and habitat to tell me what to look for, so it was only a few years later that I found the butterfly again, in very similar country, where the Peppermint Eucalyptus, and other vegetation, resembled the burnt out area.

On December 26th 1922, I netted two males feeding on tea-tree blossum, so I was very elated at finding the butterfly again, I was very keen to obtain more specimens, as I felt it was a new species.

The typical habitat is Peppermint Eucalyptus country, with some trees dying, and other trees with dead limbs, or partly dead top, stumps also are very useful if they shelter food colonies of the *Iridomyrmex* ant.

These types of trees give very good shelter to the Iridomyrmex ant, the trees generally being riddled with holes of the Longicorn Beetles which the ants use for their nests.

I visited the area several times during the following weeks, and on one occasion saw two specimens of *Pseudodycsas cuprea* flying high over these partly dead trees presumably on a "mating flight", but none would come down to feed on blossom.

This area was cleared by the bull-dozers, and ploughed up the following year, so once again I had to make a fresh start.

While working on my stud farm in the intervening years, I noticed on a 5 acre paddock a number of Peppermint trees in a very unhealthy or dying condition, I kept these trees under close observation during the summer months.

During the summer of 1937 I saw what I thought to be a specimen of Pseudodipsas cuprea flying high over a tree of Peppermint Eucalypt, this convinced me that I must investigate that tree.

The following day, I felled that tree, and carefully split open all the dead limbs, which were swarming with the *Iridomyrmex* ant.

I found two larva of Pseudodipsas cuprea, in seperate borer holes, one a little more than half grown, the other one about ¾ grown. I placed these two larvae, in separate borer holes, which were infested with the *Iridomyrmex* ant, on a *Cootamundra* acacia tree in my garden.

This acacia tree had a large dead top swarming with the *Iridomyrmex* ants, and in the ensuing years while breeding a long series of *Hypochrysops* delicia delos from this tree, I also bred a series of *Pseudodipsas cuprea* from the same tree, and at the same time as well.

This seemed to me to be a long journey from that hot summer day in 1917.

The successful conclusion in this life long search for Pseudodipsas cuprea, and the discovery of its life history, gives any Naturalist a lot of pride, which rather makes up a little for the disappointment of being robbed of the pleasure of naming the butterfly, and describing it.

At the time I gave several specimens of *Pseudodipsas cuprea* away to collector friends. I should not have done this, for at that stage my health was giving my family, and myself some concern.

I think my notes have proved without doubt that *Pseudodipsas cuprea* is purely a carnivorous butterfly, and feeds on young ant larva.

In some strange way the ants feed the tiny minute larva, in much the same way as they feed their own young, until the larva are strong enough to attack the ant pupa, and young ants, by sucking the juices from their bodies.

It is indeed a strange relationship!

I have on several occasions watched a female *cuprea* laying her eggs in clusters of 2 or 3 or more on the well worn "ant runs", 2 hours after, the eggs were laid the ants had collected all of them, and taken them to their nests in the various holes in the tree.

I have never found more than one *Pseudodipsas* larva, in a hole with the ants, I believe the larva are cannibalistic, and will attack, and devour each other.

I trust my readers will find these notes, and observations, on *Pseudodipsas cuprea*, and its amazing and fascinating life-history interesting.

C.G.L. (Llewellyn) Gooding,
Honorary Life Member.
Warragul Field Naturalist Club.

* The date 1966 in "Australian Butterflies", by Charles McCubbin is an error for which Mr. McCubbin is not responsible.

The above article originally appeared in "The Latrobe Valley Naturalist" and is reprinted with the author's permission.

THE HYMENOPTERA

It is hoped that from the past, present and future articles a greater interest and understanding of this unsurpossedly economically important order will be gained, and that a brief knowledge of all the different families and their roles in the insect world may be obtained. It may be of importance to the strict coleopterist and lepidopterist since of the great part played by the Hymenoptera in the ecology of beetles and butterflies.

SCOLIIDAE: (Hairy flower wasps)

In connection with Coleoptera this family is of high economic importance especially to the scarabs, which are the Scoliids' most predominant form of prey. These usually medium to large wasps are fossorial in habits and hence parasitize their prey while it is underground, usually in the larval stage. They are not very strong fliers but buzz loudly. Probably very much like the Pompilids in that their fossorial habits have increased the size of the pronotum although Scoliids and Pompilids are completely unrelated. The Scoliids are a rather ancestral family of wasps and have a number of world wide relatives including distant relatives such as the Apoidea and Formicoidea, the bees and ants. The dimorphism is quite distinct since males of most species are usually long and slender with black thorex and yellow and black striped markings on the abdomen, while females are generally large to medium in size, very bulky and stoutly built; colouring is usually from black to yellow, gold or orange in marking or in complete colouring. All species are hairy to very hairy and range over all of Australia, coastal and inland, however it is quite unfortunate that rather little is known about this intriguing and interesting family. The larva spins a brown ellipsoid silky coccoon underbark where it pupates after leaving the host's body. Some imagines may hatch as late in the year as March, other as early as September.

TIPHIIDAE: (Flower Wasps)

Once known as the *Thynnidae* this is also a very closely related family to the Scoliids, in fact in the same superfamily, and so shares similar habits with them. The females of the sub-family *Thynninae* are apterous and fossorial in habit as are the Scoliids. With *Diamma bicolor* (Blue ant) it has been noticed that the female insensitizes *Gryllotapids* (mole crickets) in their burrows and then drags the victim to her own burrow where she lays an egg on a limb. During summer females are often seen on the ends of leaves or grass blades while they wait for a male; there is quite a controversy as to how the female is picked up by the male or whether the female grabs the male; however that is open to further study. After mating the female lets go of the mole cricket and drops to the ground where she runs off to dig for larval scarab prey, (as in species other than *Diamma bicolor*).

There are two other sub-families known in Australia, both of which have winged males and females; these are the *Anthaboscinae* and the *Tiphiinae*. Both these sub-families are fossonal in habit and are believed to be scarab parasites.

The *Tiphiids* are well represented in Australia and although quite a bit is known about them they are still in need of much further study. Generally slender in appearance except for the *Anthaboscinae* and *Tiphiinae*, their colours range from black to greys, yellows and oranges. Larvae pupate in pear-shaped brown silken coccoons within the host's body, imagines appear during early spring and late summer.

MUTTILIDAE: (Solitary Wasps)

Another family related to the *Scoliidae* and again under the superfamily *Scolioidea*. These wasps possess similar characters to the *Thynninae* in that the females are completely apterous and copulate with males during flight. Commonly referred to as 'Solitary ants', 'Solitary wasps', or even 'Velvet ants', they usually parasitize solitary species of vespoid and sphecoid wasps and solitary bees. The integument is incredibly inpenetrable and rugase in external appearance. Owing to the great difference in sexual dimorphism and the fact that species are rarely found in copulation many of Australian species have been incorrectly classified, resulting in an over estimation of the number existing species. Females are generally 'ant-like' in appearance but with round hairy heads and the flagellum of the antenna is normally curved. Both female and male have a highly elongated second abominal segment and this together with the ridges separates females mutilids from ants. They are best represented in the tropics but found over most of Australia including southern desert and coastal areas. These wasps are generally very hairy and colours range from rust reds and whites to blacks and greys. Specimens may be found almost anywhere : under bark, in litter, on trunks, and on the ground. Lavae pupate in the host's body and emerge from early spring through to late summer in the south; other than this again little is known of their habits.

RAY BESSERDIN

BUTTERFLIES OBSERVED AT GLOUCESTER FALLS

21 - 23 JAN. 1972

by D.E.A. Morton.

This notes gives a list of butterflies observed in the Gloucester Falls area of the Barrington Tops National Park. The Falls are some 30 miles West from the Stroud-Cloucester road, following the road signposted Gloucester Tops. There are many fords to cross, which become impassable to ordinary vehicles if there has been a lot of rain. Altitude about 3,500 feet.

HESPERIIDAE

Anisynta dominula draco (Meyr.) Dominula Skipper.	Very common.
* *Hesperilla crypsargyra hopsoni* Waterh. Silvered Skipper. On the big Gahnia.	Few seen.
Signeta flammeata (Butl.) Bright Shield Skipper.	Plentiful.

PAPILIONIDAE

Graphium macleayanus macleayanus (Leach) Macleay's Shallowtail.	A few worn specimens seen.

PIERIDAE

Delias nigrina (Fab.) Common Jezabel.	One seen.

NYMPHALIDAE

Heteronympha merope merope (Fab.) Common Brown.	Scarce.
Heteronympha penelope penelope Waterh. Shouldered Brown.	Plentiful.
Heteronympha cordace cordace (Geyer) Bright-eyed Brown.	Plentiful.
Oreixenica lathoniella herceus W. & L. Common Silver Xenica.	One seen.
Oreixenica kershawi ella (Oll.) Kershaw's Brown.	Several seen.
Geitoneura klugi klugi (Guer.) Klug's Xenica.	Several seen.
Tisiphone abeona regalis Waterh. Swordgrass Brown. Very common.	Variable.
Vanessa kershawi (McCoy) Australian Painted Lady.	Few seen.
Vanessa itea (Fab.) Australian Admiral.	Two seen.

LYCAENIDAE

Neolucia hobartensis monticola F. & L. Mountain Blue	Several seen.
Zizina otis labradus (Godt.) Common Grass-blue.	Plentiful.
* *Toxidia rietmanni rietmanni* (Semp.) White-brand Skipper.	One female seen.

Collecting in North-eastern Australia.

8 April 1972 - 4 June 1972.

by R.C. and Nola Manskie.

Many other collectors have done trips similar to this; but for us, it was a new experience and something that we will always remember : eight weeks collecting and observing Lepidoptera. We had gained much information and advice from other collectors and interested people, nevertheless a certain feeling of anticipation of whay lay ahead of us must have been obvious, especially to our friends "Zoo" and Mary LeSouef, who we feel were the instigators of our trip.

We chose the inland route to Queensland and travelled approximately 6500 miles on our journey to Cooktown, Q. and back to Springvale N., Vic., during which time 103 different species were taken; 450 specimens were set and stored for travelling (these storage cases were laid between blankets, on the rubber mattress, in the back of the station wagon; and in this way no movement of specimens was noted during the entire trip); also many other specimens were enveloped.

Our collecting commenced on the third day : after driving many miles through the Pilliga Scrub, we were pleased to come upon open She-oak (*Casuarina*) Country (15 miles S. of Dalby); here several specimens of *Ogyris amaryllis amaryllis*, were observed flying around the mistletoe on the *Casuarina*; *Catopsilia pyranthe crokera* and *Catopsilia pomona pomona* were netted.

It was always interesting to us to observe the different collecting spots (these had been noted down prior to the commencement of our trip) as we travelled further north; one of our disappointments, however, was not being able to get to some of the better known favourite areas around Cooktown - these being Shipton's Flat and Archer Point - owing to the unexpectedly long wet season, nevertheless, with our friend Archie May, we had two days exploring the Annan River (10 miles S. of Cooktown); and trying to reach the mouth. Here in the mangroves we netted *Hypochrysops narcissus narcissus* and collected several pupae of *Hypochrysops apelles apelles*. *Jalmenus evagoras eichhorni* was collected in all stages; larvae, pupae, and butterflies, at Trevethan Creek (17 miles S. of Cooktown).

Hypochrysops narcissus narcissus was also taken at Yule Point (17 miles N. of Cairns); once again it was very local and common; sometimes a dozen or more specimens were seen at the one time. A thorough search of the mistletoe on the mangroves was made, for this species, seeking the life history but no conclusion was formed as to where it was breeding.

To us the Mission Beach area seemed to support many species of butterflies; we spent approximately two weeks here, and perhaps the most exciting experience was taking *Liphyra brassolis major* (male); it was plucked from a toilet wall at 11.55 p.m. on 17.5.72; we would like to know if this butterfly has ever been taken in this manner before; we feel, it was attracted to the lights surrounding the toilet block. It was also a thrill to net, for the first time, *Papilio ulysses joesa* (male); these were flying in great numbers.

Because of the limited time; a choice had to be made between collecting a quantity of species or studying life histories; we chose to collect as many species as possible and be content with seeking one or two life histories.

Knowledge of localities and surroundings, becomes more obvious when you are able to collect with notable entomologists; we had the pleasure of collecting with M. J. Manskie at Maryborough, Q., and A. Atkins; and G. and Anne Daniels at Rockhampton.

To conclude we feel we must mention an extract from a letter, written by our frient Archie May, and sent to our children during our absence : a humorous side to collecting butterflies - "Yesterday, I went to the Mowbray River (S. of Daintree Crossing), and there were beautiful Leafwings(*Colleschallia bisaltide australis*) flying, but it definitely was not my day, they would sit in front of me and open their wings; a lovely yellow; but although they were nearby in the net, there was always a stick or something in the way. Those butterflies really tormented me all the morning until I was exhausted and hungry; and when I sat down to have my lunch on the tail gate of the car and took the things out of the lunch box, one came and sat on the lunch box right in front of my nose and opened its wings; of course I slowly rose up to get the net, and when I was ready to swipe, it flew into the car; when it came out it sat on the honey pot; I was just going to swipe again, when it flipped and sat on my shoulder!! How was I going to catch it? I had not practices that one, with a long handled net. Those leaf wings were too good for me, I caught some oak blues instead; butterfly catching is hard work!!"

LIST OF SPECIES

NAME	Code No.
Family *HESPERIIDAE:*	
Hasora hurama hurama (Broad-banded Awl)	1
Badamia exclamationis exclamationis (Brown Awl)	2
Tagiades japetus janetta (Black and White Flat)	3
Notocrypta waigensis proserpina (Banded Demon)	4
Arrhenes dschilus iris (Iris Skipper)	5
Cephrenes trichopepla (Yellow Palmdart)	6
Cephrenes augiades sperthias (Orange Palmdart)	7
Sabera caesina albifascia (Black and White Swift)	8
Sabera fuliginosa fuliginosa (White-fringed Swift)	9
Sabera dobboe autoleon (Miskin's Swift)	10
Pelopidas lyelli lyelli (Lyell's Swift)	11
Family *PAPILIONIDAE:*	
Graphium macleayanus wilsoni (Macleay's Swallowtail)	12
Graphium sarpedon choredon (Blue Triangle)	13
Graphium eurypylus lycaon (Pale Green Triangle)	14
Graphium agamemnon ligatus (Green Spotted Triangle)	15
Papilio aegeus aegeus (Orchard Swallowtail)	16
Papilio ambrax egipius (Ambrax Butterfly)	17
Papilio demoleus sthenelus (Chequered Swallowtail)	18
Papilio ulysses joesa (Ulysses Butterfly)	19
Cressida cressida cressida (Big Greasy)	20
Pachlioptera polydorus queenslandicos (Red-bodied Swallowtail)	21
Ornithoptera priamus euphorion (Cairns Birdwing)	22
Family *PIERIDAE:*	
Catopsilia pyranthe crokera (Common Migrant)	23
Catopsilia pomona pomona (Lemon Migrant)	24
Eurema hecabe phoebus (Common Grass Yellow)	25
Eurema herla (Macleay's Grass Yellow)	26
Elodina parthia (Chalk White)	27
Elodina egnatia angulipennis (Common Pearl White)	28
Elodina perdita perdita (Northern Pearl White)	29
Delias argenthona argenthona (Northern Jezabel)	30
Delias mysis mysis (Union Jack)	31
Delias ennia nigidius (Nigidius Jezabel)	32
Delias nysa nysa (Nysa Jezabel)	33
Delias nigrina (Common Jezabel)	34
Cepora perimale scyllara (Australian Gull)	35
Appias paulina ega (Common Albatross)	36
Appias melania (Grey Albatross)	37

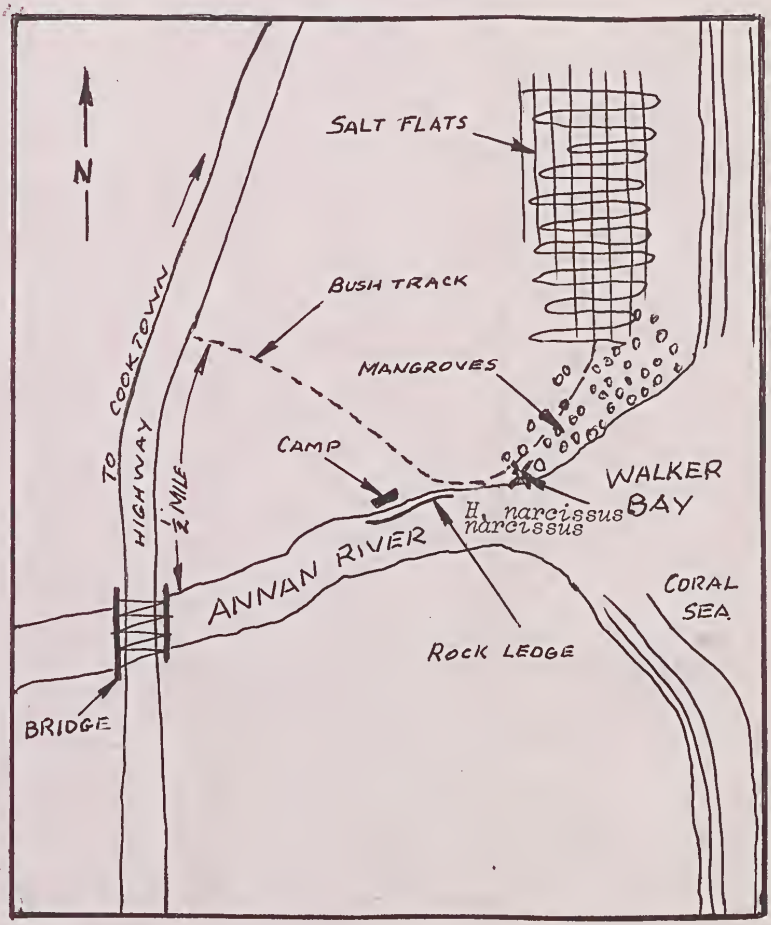
NAME	Code No.
Family *NYMPHALIDAE:*	
Danaus chrysippus petilia (Lesser Wanderer)	38
Danaus affinis affinis (Black and White Tiger)	39
Danaus hamata hamata (Blue Tiger)	40
Euploea eichhorni (Eichhorn's Crow)	41
Euploea core corinna (Common Australia Crow)	42
Euploea sylvester sylvester (Two-brand Crow)	43
Euploea tulliolus tulliolus (Eastern Brown Crow)	44
Tellervo zoilus zoilus (Cairns Hamadryad)	45
Mycalesis sirius sirius (Cedar Bushbrown)	46
Mycalesis terminus terminus (Orange Bushbrown)	47
Mycalesis perseus perseus (Dingy Bushbrown)	48
Melanitis leda bankia (Evening Brown)	49
Ypthima arctous arctous (Dingy Ring)	50
Hypocysta irius (Northern Ringlet)	51
Hypocysta pseudirius (Dingy Ringlet)	52
Hypocysta adiante adiante (Orange Ringlet)	53
Neptis shepherdi shepherrdi (Common Aeroplane)	54
Neptis praslini staudingereana (Black and White Aeroplane)	55
Neptis consimilis pedia (Orange Aeroplane)	56
Mynes geoffroyi guerini (White Nymph)	57
Hypolimnas alimena lamina (Blue-banded Eggfly)	58
Hypolimnas bolima nerina (Common Eggfly)	59
Hypolimnas misippus (Danaid Eggfly)	60
Yoma sabina parva (Australian Lurcher)	61
Precis hedonia zelima (Brown Soldier)	62
Precis villida calybe (Meadow Argus)	63
Precis orithya albicinta (Blue Argus)	64
Cethosia chrysippe chrysippe (Red Lacewing)	65
Vindula arsinoe ada (Cruiser)	66
Vagrans egista propinqua (Australian Vagrant)	67
Cupha prosope prosope (Australian Rustic)	68
Acraea andromacha andromacha (Glasswing)	69
Family *LYCAENIDAE:*	
Liphyra brassolis major (Moth butterfly)	70
Rapala varuna simsoni (Indigo Flash)	71
Hypolycaena phorbas phorbas (Common Tit)	72
Jalmenus evagoras eubulus (Pale Imperial Blue)	73
Jalmenus eichhorni (Northern Imperial Blue)	74
Narathura araxes eupolis (Dull Oakblue)	75
Narathura madytus madytus (Bright Oakblue)	76
Narathura micale amphis (Common Oakblue)	77

NAME	Code No.
Ogyris zosine typhon (Purple Azure)	78
Ogyris oroetes (Silky Azure)	79
Ogyris hewitsoni hewitsoni (Satin Azure)	80
Thysonotis danis seraphis (Large Green-banded Blue)	81
Thysonotis hymetus taletun (Small Green-banded Blue)	82
Thysonotis cyanea arinia (Tailed Green-banded Blue)	83
Hypochrysops apelles apelles (Copper Jewel)	84
Hypochrysops narcissus narcissus (Narcissus Jewel)	85
Pseudodipsas digglesii (Diggles' Blue)	86
Pseudodipsas cephenes (Cephenes Blue)	87
Prosotas dubiosa dubiosa (Small Purple Lineblue)	88
Nacaduba kurava parma (White Lineblue)	89
Catopyrops florinda estrella (Speckled Lineblue)	90
Jamides phaseli (Dark Cerulean)	91
Syntaracus plinius pseudocassius (Zebra Blue)	92
Theclinesthes scintillata (Glistening Blue)	93
Lampidea boeticus (Pea Blue)	94
Catochrysops panormus platissa (Forget-me-not)	95
Euchrysops cnejus cnidus (Cupid)	96
Everes lacturnus australis (Tailed Cupid)	97
Zizeeria alsulus alsulus (Black-spotted Grass-blue)	98
Chilades trochilus putli (Grass Jewel)	99
Candalides erinus erinus (Small Dusky Blue)	100
Candalides absimilis (Absimilus Blue)	101
Candalides helenita (Helenita Blue)	102
Lycaenopsis tenella (Australian Hedge Blue)	103

LIST OF LOCALITIES AND CODE NUMBERS TO THE DIFFERENT SPECIES

LOCALITY	CODE NO.
Kingaroy	6 33 35 48 69 79
Dalby	23 29
Gympie	39 79
Maryborough	13 14 16 18 24 31 34 38 40 42 48 49 53 62 64 68 71 73 80 82 88 89 91 92 93 101
Rockhampton	7 11 18 24 25 26 40 44 48 49 50 53 59 69 71 82 88 90 95 99 101
Yeppoon	23 24 25 27 43 44 48 49 53 58 60 71 75 76 78 80 84 86 89 90 91 95 96 101
Emmett Creek	30 47 53 64
Townsville	60
Bowen	24 31 40 60 64 69 84 90 95
Bramston Beach	15 19 65 67 94
Mission Beach	2 3 8 10 13 15 19 20 21 22 24 30 31 32 40 44 46 47 54 55 60 62 65 68 70 82 83 87 90 91 94 95
Cairns	1 3 5 6 13 17 19 31 32 39 45 47 54 55 56 57 58 59 64 67 68 76 94 102
Kuranda	4 9 12 15 19 30 31 32 36 37 45 47 49 52 56 66 68 81 87 89 94 103
Yule Point	25 76 84 85 95 100
Ellis Beach	28 42 51 53 59 61 72 91 97 100
Daintree Crossing	30 31 32 46 47 48
Spring Creek	50 62 64 68
Cooktown	4 25 28 31 41 56 59 62 63 64 68 74 82 84 85 97 101

ANNAN RIVER AREA



NATIONAL MUSEUM
- 7 MARS 1973
OF VICTORIA

VICTORIAN ENTOMOLOGIST

The Journal of
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THE ENTOMOLOGICAL SOCIETY VICTORIA

OBJECTS

(a) To stimulate the scientific study and discussion of entomology in all its aspects.
(b) To gather, preserve and disseminate knowledge of Australian species of insects.
(c) To compile a list of known species of Victorian insects.
(d) To bring together in a social and scientific atmosphere all persons interested in entomology.

ANNUAL SUBSCRIPTIONS

Payable in advance and due at the annual general meeting.

Ordinary members	$3.00.
Country or Associate members	$1.00.
Junior members	$1.00.
Student members	$1.00.

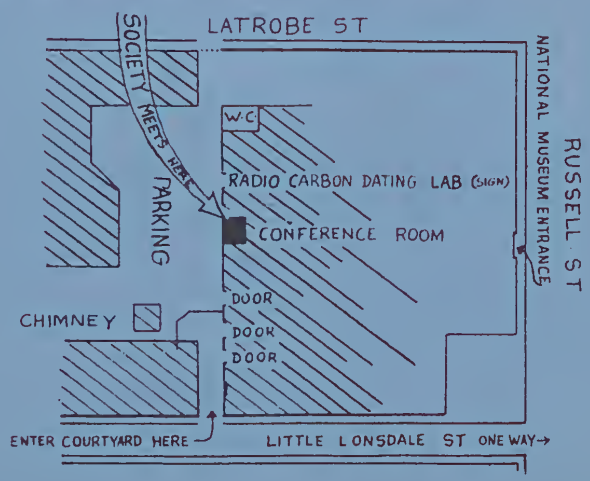
Cheques or money orders for remittance of subscriptions or donations should be made payable to "The Entomological Society of Victoria" and be addressed to the Hon.Treasurer.

MEMBERSHIP

Open to all persons interested in entomology. Applications or enquiries re membership should be addressed to the Hon. Secretary.

MEETINGS

The Society's meetings are held in the Conference Room at the National Museum (see inset). Meetings start at 8 p.m. sharp on the second last Friday of alternate months commencing with the annual general meeting in February. Visitors are always welcome.



NATIONAL MUSEUM OF VICTORIA

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The statements and opinions expressed in this Journal are the views of the respective authors, and not necessarily those of the Society.

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ENTOMOLOGICAL SOCIETY of VICTORIA

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Hon. Treasurer: Mr. R. Condron, 96 Shannon St., Box Hill Nth. 3129.

Librarian: Mr. J. Hutchinson, 24 Junction Rd, Blackburn Nth. 3130.

Immediate Past-President: Mr. P. Kelly.

Diary of Coming Events

General Meeting Members night

December 15, 1972 (Third Friday of the month)

THIS IS THE FINAL MEETING AT THE CONFERENCE ROOM, MUSEUM.

December 26 - January 1. Excursion to Suggan Buggan CANCELLED DUE TO EXTREME FIRE DANGER.

1973 GENERAL MEETINGS. CLUNIES ROSS HOUSE, NATIONAL SCIENCE CENTRE, 191 Royal Pde., Parkville. 3052.

16th February, 1973.
27th April, 1973.
22nd June, 1973.
24th August, 1973.
19th October, 1973.
14th December, 1973.

Time: 8-11 p.m.

EDITORIAL

It is rather instructive to compare the early issues of "Wings and Stings" with the last few issues of "The Victorian Entomologist". The latter magazine is much neater and better in appearance, but "Wings and Stings" had a much greater number of articles on a much wider range of subjects. Yet the Society has now far more members than it had then. What has happened to prevent people from writing articles?

Certainly, it cannot be said that most of what can be written has been written already. Every entomologist has some information that is known only to him. Published information on distribution of and localities for insects is still rather small in volume. Many life histories have still to be documented. Foodplants or food sources of many insects are unknown. And the field of behavioural study is virtually untouched for most of our insects. There is no shortage of material for articles.

It has been suggested that would-be authors are being deterred by the "Instructions to Authors" in Volume 2 Number 2. If this is so, then it is to be regretted, for these instructions were published mainly for people wishing to write scientific papers, the aim being to suggest a useful and uniform layout for such articles. It was not intended, and is not desirable, that these instructions be followed rigidly for articles of a less formal type. Nor was it intended that authors should stop writing articles of the type that made "Wings and Stings" so interesting and valuable. It would be most unfortunate, too, if junior members were afraid to write because they thought that they could not follow the instructions or that their articles were not good enough. Junior articles of all kinds are particularly welcome. It should also be added that articles need not be typed, but if not typed they should be absolutely legible and double-spaced.

The journal is our main means of communication with other entomologists, and it is by the journal that we are judged. Nothing could reflect worse on the Society than a complete lack of articles. Any well-written article containing original information is worthy of a place. I hope we can look forward to many more articles of all kinds.

On behalf of the Publications Committee, and indeed all members of the Society, I wish to thank Sue Beattie for all the work she has done to improve the newsletter-journal while she has been Secretary; its present form and quality are due in very great measure to her efforts, for which we are extremely grateful.

The Editor wishes everyone a Happy Christmas and a profitable collecting season.

REPORTS AND NOTICES

Compiled by Miss S. Beattie

GENERAL MEETING (Friday, October 20, 1972)

The Deputy President, Mr. J.C. Le Souef chaired the meeting, which was attended by 38 members and friends.

Apologies were received from Messrs. N. Quick, A. Morton, R. Besserdin and D. Holmes and Misses H. Malcolm and E. Matherson. Nine new members were proposed and accepted unanimously. The confirmation of the Minutes was delayed until the December meeting.

CORRESPONDENCE was received as follows:

1. T.I.E.G. Vol. 7 No. 1, Spring 1972.
2. Journal of the Australian Entomological Society Vol. 11 No. 3 Sept.1972.
3. Ian Clunies-Ross Memorial Foundation, confirming their approval of the Society's application to use their building for meetings in 1973.
4. Thomas Meacham, 301 W. Stocke, Glendale, Calif., U.S.A. 91202, who is interested in buying, selling and exchanging butterflies.
5. S. Hayama, 12 Midari machi, Furana City, Hokkaido, Japan, who wishes to contact other members interested in butterflies.
6. Circulars on the Entomol. Soc. of Aust. (N.S.W.) Nos. 224-228.
7. Report on 14th International Congress of Entom.

NEW MEMBERS to be elected at the December meeting:

1. Mr. Michael Schwarz, "The Bungalow", Devonshire Lane, Mt.Macedon.3441. - *Hymenoptera*
2. Mr. Bob Mullany, 296 St.Kilda St., Brighton, Vic. 3186 - General entomology.
3. Mr. Michael Smith, 2 Gillard St., Burwood, Vic. 3125. - *Coleoptera*.

THE SPEAKER

Speaker for the evening was Miss Sue Beattie. In view of the excursion to be held to the Suggan Buggan area in December, Miss Beattie based her talk on the many fascinating aspects of this area in its geology,fauna, flora, and history. A synopsis of this talk and relevant details of the excursion appear in this Journal.

DEPUTY PRESIDENT

Mr. J.C. Le Souef explained that he had been elected Acting-president because the President was in the U.K. and would not be returning until the end of the year.

GENERAL BUSINESS

1. Treasurer's Report:
   The Treasurer reported a financial standing of $40.34 with a total membership of 69 financial members.

2. Editor's Report:
   The Editor apologized for the delay of the October issue of the journal.

3. Excursion Report:
   Six members attended the excursion to Waratah Bay (Sept.28 - Oct.1.).

   A report appears later in this issue.

INTERNATIONAL CONGRESS OF ENTOMOLOGY

Mr. A. Neboiss reported that a total of 1300 people attended the Congress from 64 countries, and 750 papers were read. The next Congress, in four years' time, will be held in Washington, U.S.A.

EXHIBITS

Mr. J. Hutchinson: Coleoptera and Odonata from Walkerville Vic., Daly River N.T., and Canberra A.C.T.

MISCELLANEOUS

Mr. P. Kelly reported excellent collecting in the Brisbane Ranges, with the *Leptospermum* in full bloom.

As the December meeting will be the final meeting for the year, could members please bring a plate for supper; tea and coffee will be available.

MATTERS DISCUSSED AT THE COMMITTEE MEETING

1. Retirement of Miss S. Beattie as Secretary.
2. Meeting dates and speakers for 1973.
3. Name tags to be worn at General Meetings.
4. Whether both common and scientific names should be included in Journal - to be discussed at next General Meeting.
5. Definition of Country and Junior members -
   Country - 25 miles from G.P.O. Melbourne.
   Junior - under 18.
6. Increasing cost of Journal to 30c. plus postage to those who want more than one copy of the Journal.
7. Increasing subscriptions in 1973 to meet costs of buying an offset machine for the Society in order to save costs and to centralize the work of the Journal. To be discussed at the next meeting.

MATTERS DISCUSSED AT THE PUBLICATIONS COMMITTEE MEETING (26.xi.72.)

1. The possibility of having a bimonthly newsletter and a yearly or more frequent journal was discussed.

2. The advantages and disadvantages of offset and roneo printing were discussed in the light of the fact that it will probably be necessary for the Society to buy a printing machine shortly.

3. It was decided that the author's address should appear as a footnote to each article.

4. It was decided that, when the name of an insect is given in an article, the scientific name should be used throughout, followed by the common name (if one exists) on the first appearance. For junior articles, however, it was decided that it would be permissible to use the common name throughout.

5. It was decided that in articles by junior members, the author's age should be given if under 14, or, if the author is 14 or over, his name should be followed by the words "junior member", unless the article was of sufficiently high quality to appear as an ordinary article.

6. It was decided that, except in special circumstances, republication of articles from other journals should be avoided.

If any member disagrees with or wishes to discuss any of the decisions above, he is welcome to bring the matter up at the next general meeting.

EXCURSION TO CAPE LIPTRAP 28th TO 30th OCTOBER 1972

As there does not seem to have been much insect work done in this area in recent years, it was suggested as a venue for an early Spring excursion.

This Show Day weekend trip was not largely attended. Jim Hutchinson went down on Thursday, returning on Friday, meeting Bob Condron on the road. Mary and I joined Bob and Gwen Condron and Mark Connor on Saturday morning, returning home in the afternoon. Gordon Burns also made the journey, but did not meet other members.

There is a vast difference in the landscape from our last visit in 1954. The advent of trace elements had changed the undulating low tea tree scrub with patches of gums to lush pastures well stocked with sheep and cattle. There was only one uncleared area of scrub not far from the lighthouse turn-off.

Along the roadside towards Walkerville there were a few *Gahnia* (swordgrass) plants still left with pre-pupal larvae and pupae of the skippers, *Hesperilla chrysotricha cyclospila* and several *Hesperilla donnysa patmos*. There were more on the slopes above the township. On this occasion we did not find any *Mesodina halyzia halyzia* on the widespread *Patersonia*, a number of which taken on the earlier visit.

In the dense Melaleuca scrub behind the camping sites I found a patch of *Gahnia* (probably *G. clarkei*). Here were the characteristic eats of the skipper, *Hesperilla picta*, while there were a number of *Tisiphone abeona albifascia* (Swordgrass Brown) larvae of various sizes as well. Several large larvae of the former were taken to continue their feeding on pot plants at home.

The finding of *Hesperilla picta* so far from the normal east Gippsland habitat was, naturally, of great interest. However we found later that David Crosby had recorded a female being taken on the wing by John Landy on Wilson's Promontory, I think in 1966. The Walkerville locality at least brings the distribution a little further west.

On the foreshore Blady Grass there were skipper eats of what was probably *Suniana lascivia* (Dingy Dart), but no larvae were found.

Although there was much Black Teatree in flower, it was a bit cold and a bit early for Buprestids and other flower frequenting beetles. (However the foliage of the smaller Eucalypts yielded a number of Chrysomelids and Weevils). Insect life generally was by no means abundant).

Bob Condron took only one *Anthela repleta* at his gas light on the Friday evening.

LIST OF BUTTERFLIES, LARVAE OR PUPAE TAKEN OR OBSERVED

Species.	Common Name.	Notes.
Hesperilla donnysa	Donnysa Skipper	Large larvae taken on *Gahnia* sp. above Walkerville.
Hesperilla picta	Painted Skipper	Large larvae taken on *Gahnia* sp. at Walkerville.
Hesperilla chrysotricha	Chrysotricha Skipper	Some pupae and a number of large larvae on *Gahnia* sp. at Walkerville. Smaller larvae on *G. trifida* at Kilkunda.
Tisiphone abeona	Swordgrass Brown	A number of larvae on *Gahnia* sp. at Walkerville.
Candalides acastus	Blotched Blue	Observed at Kilkunda.
Vanessa itea	Admiral	Odd specimens seen.
Vanessa kershawi	Painted Lady	A few specimens about.

J.C. Le Souef.

THE 1972 WINTER COLLECTING TRIP TO NORTH QUEENSLAND

Including notes on some Lepidopterous larvae

by J.C. LeSouef*

Here are a few notes on our visit to North Queensland during this last winter when Mary and I drove again as far as Cooktown.

It had been our intention on this occasion to spend most of our time at Yeppoon, but we gladly accepted an invitation to spend a couple of weeks with Dr. Norman B. and Mrs. Tindale and Mr. and Mrs. Noel McFarland at Tinaroo Dam on the Atherton Tableland. We had been trying to arrange such a joint trip for a number of years. For several months they had been studying in cabins at the local caravan park, Tinnie working on his book on the aboriginal tribes, the Nigritoes, which used to inhibit this region and Noel on his book on Geometridae.

On the way north we took a *Hesperilla donnysa* larva on a *Gahnia* in the Pilliga Scrub. We left this with Andrew Atkins, of Rockhampton, to breed out while we went on because of the difficulty of carrying larvae for long periods on the road. Another was taken on the return trip which was unfortunately parasitised.

An *Ogyris barnardi* pupa was taken at Dubbo and an *Ogyris oroetes* larva was taken beyond Toowoomba. The larva was green in this instance which created some interest as we had not met with a green one before. However Andrew located a reference in Burns to the colour variations.

Some Tinaroo life histories and Mercury Vapour Lamp results

North from Cardwell we met the full effect of the abnormally long wet season with constant drizzling rain all day and quite low temperatures. The comfort of the modern cabins in Tinaroo Dam was greatly appreciated in these weather conditions, when we arrived. For the first ten days we found it difficult to realise that we were actually in Queensland. Even in the odd brief sunny periods, only very common species of butterflies and moths were on the wing.

As there was little flying, we spent our time largely hunting for larvae and pupae. Having been shown the small sapling which provided the eggs and larvae of the new species of Lycaenid Noel had found, many hours were spent looking for further specimens without success. However outside the cabins on a fig we found a number of *Philiris innotata evinculis* (Common Moonbeam), several of which were later reared. Larvae and pupae of *Lampides boeticus* (Pea Blue), and *Catochrysops panormus*

* Godfrey St., Blairgowrie, Vic., 3942.

platissa (Forget-me-not) were found in the pods of *Crotalaria*. Hesperiid and satyrid larvae were located on Blady Grass.

Eventually the sun appeared and we sallied forth with out nets for the nearby rain forest with keen anticipation. But the expected new emergence after the wet spell did not eventuate. Apart from an odd *Delias nigrina* (Common Jezebel) and a fly or two, there was nothing on the wing at all. Even Tinnie was surprised at the complete lack of insect life on the patches of Lantana which had provided him with so much collecting earlier.

Although there were so few insects about in the day time, the M.V. lights at night drew a great collection from the nearby sclerophyll forest. Predominant were *Sphingidae* and *Noctuidae*, several species of the former and many of the latter. Bats in the air and the cursed cane toads on the ground took their toll at night while those left on the screen and wall were finished off by the early birds in the morning.

Interesting larvae at Cooktown

After a fortnight at Tinaroo Dam, we drove to Cooktown, calling at our collecting spot near the Lion's Den, on the way. But here, too, there was nothing much about. After a late lunch we continued on to Cooktown, setting up camp in our usual spot under the big mango tree at the back of the Sovereign Hotel.

As there was nothing of interest in the rain forest, we spent our time mainly browsing round in the open country and the mangroves. Ray and Nola Manskie had told us of *Hypochrysops narcissus* (Narcissus Jewel) flying in numbers on the mangroves bordering the northern bank of the Annan River. However we took a track we had found on an earlier visit on the southern bank instead in search of them. He we drove across salt flats and through open forest for a mile or two. On a small *Terminalia* with autumn-tinted leaves we found Lycaenid larvae, feeding on the underside of the leaves. They were attended by small ants. We were puzzled as to their identity but thought that they were probably *H. narcissus*. As these are recorded as feeding on mistletoe on *Tristania* hiding in the curled dead end of the leaf, there was some doubt. Again empty pupal cases were found in the ants' nest in the hollow trunk. These larvae were later referred to Andrew Atkins at Rockhampton who also identified them as *H. narcissus*. He was able to breed them out and confirm their identification.

Wandering out on the salt flats I saw much evidence of an earlier emergence of *Hypochrysops apelles* (Copper Jewel). On the border of those mangroves affected by the high tide I came across a colony of *H. apelles* flying. Among them I spotted a *H. narcissus*, the first I'd seen on the wing. Mary quickly joined me and we soon found them to be in quite large numbers. There were probably more than 200 of each species in an area of about 100 metres by 20.

Like *H. apelles*, they settle in the foliage and have to be flushed usually to net. There was a predominance of *H. narcissus* in one half of the strip of mangroves and *H. apelles* in the other with both species playing round two slightly higher trees. Many of the mangroves were in flower attracting *Hypolycaena phorbas* (Common Tit) and *Catochrysops panormus* (Forget-me-not), as well.

Among the many *H. apelles* larvae in the curled brown leaves, I took several which appeared to be the same as those taken on the *Terminalia*. These too were later bred out by Andrew Atkins as *H. narcissus*, answering the puzzle as to why there should be so many of the butterflies about the mangroves without a mistletoe in sight. It is probably that the larvae pupate in ants' nests in the hollow branches of the larger mangroves, as only *H. apelles* pupae were found in the curled leaves.

A few days in Cairns

A week in Cairns did not provide much of interest. There were a few things on the wing at the Cascades and abundant evidence of earlier visitations of collectors bashing tracks into the lantana at the most suitable collecting spots! Once more the Nymphalid, *Vagrans egista* (Australian Vagrant), appeared before me when I was off balance on a rock, flying before I could apply the net, eluding me for yet another year.

Unfortunately both Stan Stirling and Ted Harris were away on the only day available to visit Kuranda. We were interested to see the rapid growth of the many plants Stan had planted about his property to attract insects. An hour was spent with George Brooks.

We spent a day with the Tindales on the magnificent Cook Highway, going to Yule Point where Ray and Nola Manskie had done so well. But it was a bit late and apart from *H. phorbas*, there was nothing of interest. This is a fascinating drive anyway!

Hypochrysops digglesi at Yeppoon

A few days were spent at Yeppoon, the most interesting area we have visited anywhere apart from Cooktown. There was little opportunity to use the net but it was a treat to potter about with Andrew Atkins and Archie May looking for things and chatting. Although there were none of the many *H. digglesi* (Diggles' Blue), Ray and Nola had seen flying, we did find some pupae for the first time. We had found larvae at both Cooktown and Yeppoon on earlier trips, but never the pupae. Struck by this lack of pupae, Andrew looked further on the trees were the larvae were found. The question was soon answered when he located pupae in hollow branches and under bark. We found several as much as three metres away up a tree adjoining the food plant. I also took two larvae in the dead curled end of a much larger leafed mistletoe on Grassy Hill, Cooktown.

It seems doubtful whether any other young amateur lepidopterist has so meticulously recorded the fauna of his district in such a short time as has Andrew Atkins at Rockhampton. Seeing a sandstone Grampians-like range from the air some 70 km. from Rockhampton one day in the course of his duties with the ABC, he determined to investigate it further. After six months' search, he found a newly constructed forestry road which would take him on to the 1000 m. plateau.

A weekend at Expedition Range

So a highlight of the trip was a weekend visit with Andrew to his new collecting area on the Blackdown Plateau of the Expedition Range. Here we were introduced to a most unlikely looking patch of country about 100 m long and 30 m wide along the edge of the escarpment. Of the 80 species of butterflies taken in the vicinity, 60 were taken in this small strip. We now look forward to reading the results of his taxonomic work on them and the listing of the various species he has taken there. It was indeed, a most interesting weekend. On the way, we had the pleasure of a day with Ernest Adams, the well known coleopterist at Edungalba.

The M.V. light was not a great success on this trip as there was a moon on many of the available collecting nights. Several nice geometrids were taken at Cooktown one night while there was a mixed flight of insects at the Pine Caravan Park just north of Proserpine on another occasion. The only busy night was at the Inghan Caravan park. Here amid sugar cane and pastures, a surprising variety of insects came to the light. They represented a number of families from several large beetles and moths to the tiniest of mobile specks.

A total of 900 specimens was taken on the trip made up largely of small species which had come to the light.

LARVAE AND PUPAE FOUND

Species	Common Name	Date	Locality	Notes
Hesperilla donnysa icaria	Donnysa Skipper	7.6.72.	Pilliga Scrub	Only one larvae in an hour's search. Bred out by Andrew Atkins, 13.7.72.
Ogyris barnardi	Barnard's Azure	6.6.72.	Dubbo	3 pupae, 2 larvae Emerged 3 females 27.6.72, 21.6.72, 2.7.72.
Ogyris oroetes	Silky Azure	8.6.72.	Toowoomba	1 larva, green, bark, emerged 2.7.72. fe.
Philiris innotata evinculis	Com. Moonbeam	21.6.72.	Tinaroo Dam	10 larvae on figs 2 emerged 12, 15.7.
Lampides boeticus	Pea Blue	21.6.72.	Tinaroo Dam	Pupa in *Crotalaria* pod.Emerged 25.6.
Catochrysops panormus platissa	Forget-me-not	21.6.72.	Tinaroo Dam	2 larvae. emerged 20.6.
Satyrid larvae		21.6.72.	Tinaroo Dam	Unable to keep them going.
Skipper larvae		21.6.72.	Tinaroo Dam	Unable to keep them going.
Geometrid	Heart	16.7.72.	Tinaroo Dam	Used by Noel Mc-Farland for photo. His without mark.
Hypochrysops narcissus	Narcissus Jewel	28.6.72.	Annan River Cooktown	Taken first on *Terminalia*, later mangrove.
Hypochrysops apelles	Copper Jewel	29.6.72.	Archer Point Cooktown	Larvae and pupae common on mangrove. 7 m *Terminalia* almost defoliated Larvae and pupae under the big leaves curled round branches.
Hypochrysops apelles	Copper Jewel	2.7.72.	Annan River Cooktown	In numbers in curled or joined mangrove leaves.

Larvae and Pupae Found (cont.)

Species	Common Name	Date	Locality	Notes
Hypochrysops digglesi	Diggles' Blue	30.6.72.	Grassy Hill Cooktown	2 larvae in dead curled end of leaf em. 6.8.72.
Hypochrysops digglesi	Diggles' Blue	30.6.72.	Yeppoon	15 pupae under bark. 2 em. 24.7, 1 4.8.72.
Geometrid sp.		4.7.72.	Annan River Cooktown	Emerged 18.7.72.

THE SUGGAN BUGGAN AREA

by Susan Beattie.

2 Clyde St, Glen Iris. 3146.

This article is a synopsis of the talk given by the author at the October meeting to provide information for the excursion to this area on December 26, 1972.

Suggan Buggan

Suggan Buggan is a Scottish name meaning thick mat or cover, presumably referring to the thick cover of native grasses which existed in the area before the advent of sheep, cattle or rabbits.

In 1923 the discovery of the Monaro Plains with their broad valleys provided a natural pass through which the early settlers travelled to take up new runs. Cattle were first pastured in the Suggan Buggan Velley in 1943.

The Suggan Buggan River valley is in a rain shadow area and receives one of the lowest rainfalls in East Gippsland - less than 20" per annum. Surrounding hills catch most of the rain and the valleys in between are left comparatively dry. For this reason dry country plants, such as the Murray Pine (*Callitris columellaris*), grow there. Most stands are around 40-80 years old and are remnants of a mature grassy woodland. These pines regenerate after fire and are very slow growers. Rabbit plagues nibbled the new shoots and not until 1950, when the rabbit numbers were reduced by myxomatosis, did some new trees begin to re-establish. Several fire-scarred veterans, 66 feet high and up to 250 years old, are still standing - the oldest pine known in the area had the road cut around it to leave it standing. The pines grow in pure stands on the northwest slopes and are mixed with *Eucalyptus albens* (White Box) on the east and southwest slopes. On the south and southeast slopes pure stands of *E. albens* exist. The pine buprestid *Stigmodera suturalis* is known to infest the Murray Pine.

Little River Falls and Gorge

Both the Little and Suggan Buggan rivers flow into the Snowy River. Where these rivers encounter masses of rhyodacite in their courses, they have carved a series of remarkable gorges.

The 100 foot (30-40 m) drop of the Little River Falls is the head of the Little River Gorge, which has carved its course for some 8½ miles (13 km) through this rock, forming spectacular sheet cliff faces. One can climb beneath the falls to find several unusual ferns growing in the crevices of the dripping rock face. One of these is *Cystopteris fragilis* (Brittle

Bladder Fern), one of Victoria's rarest ferns, found for the second time in Victoria at this locality.

Along the top of the gorge is evidence of Lyrebird display mounds.

Petrogale pencillata (Brush Black Wallaby)

This animal was once extremely abundant in the rugged mountain tracts of northeastern Victoria. Only 18" (0.5 m) high, it is generally bluish-grey in colour, blending in remarkably well with the surrounding rock. The soles of its feet are like thick rubber pads, enabling it to jump about the steep smooth ledges and rockfaces. Within a few years of the appearance of the fox this animal became so rare that by 1915 it was almost extinct.

Keith Rogers, a noted naturalist who has a property in the area, rediscovered the wallaby along the boundary of his property about 1937. Since that time, the Victorian Fisheries and Wildlife Department had made a permanent wildlife reserve embracing some 15 miles of the Rocky Range overlooking the Suggan Buggan Valley, incorporating some of the more accessible colonies.

Scribbly Gums.

There are two species of eucalypt on the Wulgulmerang Plateau (3000 feet (900 m) above sea level) that appear very similar. *Eucalyptus rubida* (Candlebark) grows with *E. pauciflora* (Snow Gum or White Sallee) and the one obvious difference between these two species is the scribble markings, which appear on the bark of the Snow Gum but not on the Candlebark, made by insect larvae.

Blackboy Trees - Hanging Rock

Overlooking a gorge is Hanging Rock where several Blackboy trees grow, protruding out over the sheer cliffs. For centuries these trees have been a favourite perching spot for Wedge-tailed Eagles (*Aquila audax*) as they scan the gorge for prey, and over the years the trees have become distorted and worn by the eagles.

Ant Mound - Saw Pit Creek

Very near the campsite at Suggan Buggan is a huge mound of the meat ant *Iridomyrmex detectus*. Observed over the last ten years, this structure had changed very little in shape. It is estimated to contain some 40 tons of material and is possible centuries old. This meat ant is a scavenger, but it also hunts the sugary "manna" that is made by certain scales insects or found exuding from the twigs and foliage of some eucalypts. When disturbed these ants swarm out from their tunnels, and although they will not sting, bite quite savagely.

References

'Naturalists Diary' N.A. Wakefield.
Royal Soc. of Vic. Proceedings 'East Gippsland Symposium' Vol. 82. Pt. 1. Jan. 1969.
Vic. Nat. Vol. 77 No. 1 May 60.
Vol. 77 No. 2 June 60.
Vol. 77 No. 11 March 61.
Vol. 82 No. 1 May 65.
Vol. 87 No. 6 June 70.

PLEASE NOTE: THE TRIP TO SUGGAN BUGGAN 26.12.72 HAS BEEN CANCELLED DUE TO THE EXTREME FIRE RISK AT PRESENT.

Other details for campers:

Suggan Buggan is approximately 280 miles from Melbourne. The roads are generally sealed except for the last 40 miles, which is a winding dirt mountain road.

Petrol: Petrol can be obtained only at Wulgulmerang. It is advisable to fill the car at this point and carry extra petrol in the car.

Food: As there is no store at Suggan Buggan, food should be taken to last through the camping period.

Water: There is plenty of water available in the Suggan Buggan River but it is advisable to carry a water bottle on walking trips.

Clothing: Good walking shoes for rough rocky terrain and a sun hat are essential.

Other Gear: Bring own tent and sleeping gear. Fishing is allowed in the river.

NO OPEN FIRES ARE ALLOWED.

APPENDIX: The Flora of Suggan Buggan.

Callitris columellaris	Murray Pine
Eucalyptus albens	White Box
E. macrorrhyncha	Red Stringybark
E. viminalis	Manna Gum
E. goniocalyx	Long Leaf Box
Casuarina stricts	Drooping She-oak
Acacia mollissima	Black Wattle
A. dealbata	Silver Wattle
A. pycnantha	Golden Wattle
A. doratoxylon	Spearwood
A. implexa	Lightwood
A. falciformis	Sickle Wattle
A. melanoxylon	Blackwood
Brachychiton populneus	Carrajong
Exocarpos cupressiformis	Cherry Ballart
Bursaria spinosa (var. incana)	Blackthorn
Tieghemopanax sambucifolius	Elderberry Panax
Solanum aviculare	Kangaroo Apple
Clematis glycinoides	Forest Clematis
C. aristata	Forest Clematis
C. microphylla (var. leptophylla)	Forest Clematis

Flowering Shrubs:

Eriostemon trachyphyllus	Blunt-leaf Waxflower.
Phebalium lamprophyllum	Shining Phebalium
Correa reflexa	Red Correa
Olearia iodochroa	Violet Daisy Bush
Oxylobium ellipticum (var. angustifolia)	Golden Shaggy Pea
Mirbelia oxyloboides	Mountain Mirbelia
Prostanthera rotundifolia	Round-leaf Mint-bush
Haloragis racemosa var. Baverlenii	Shrubby Raspwort
Anthocercis albicans	Grey Ray-flower
Plagianthus pulchellus	Common Hemp-bush
Amyema miquelii	Stalked Mistletoe
Amyema pendulum	Drooping Mistletoe
Muellerina eucalyptoides	Common Mistletoe
Glossogyne tenuifolia	
Blennodia alpestris	Mountain Cress

Grasses:

Themeda australis	Kangaroo Grass
Poa australis (sp.aggregate)	Tussock Grass
Danthonia semi-annularis	Wallaby Grass
Agropyron scabrum	Common Wheat Grass
Microlaena stipoides	Weeping Grass
Echinopogon ovatus	Hedgehog Grass
Dichanthium sericeum	Beard Grass
D. affine	Beard Grass
Paspalidium gracile	Graceful Panic Grass
Agropyron pectinatum	Comb Wheat Grass
Festuca duriuscula	Hard Fescue
Vulpia bromoides	(Brome Fescue
Aira caryophyllea	Introduced (Silvery Hair Grass
Koeleria phleoides	(Annual Cats-tail

Some Ferns:

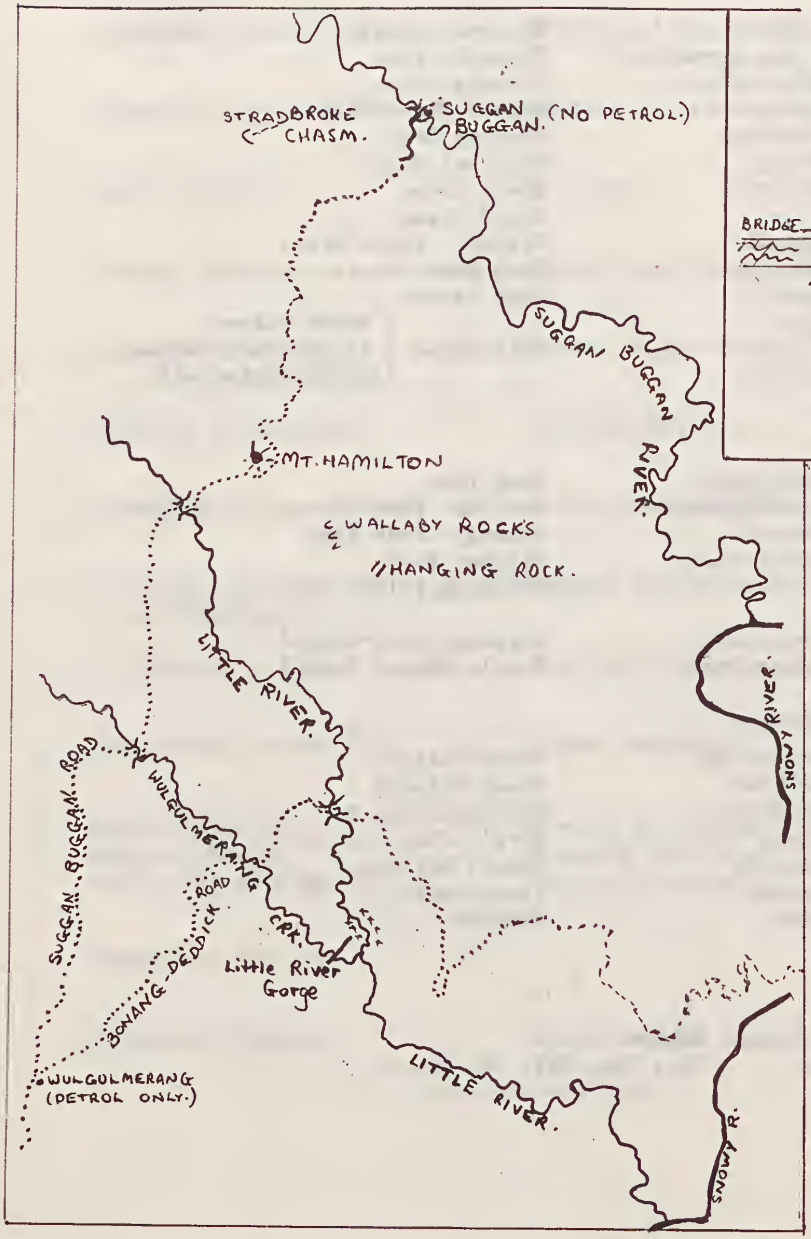
Cheilanthes tenuifolia	Rock fern
Asplerium flabellifolium	Necklace Fern
Notholaena distans	Bristly Cloak Fern
Pleurosorus rutifolius	Blanket Fern
Cyclophorus serpens	Creeping Polyplody
Dendrobium striolatum	Streaked Rock-Orchid
Corysanthes diemenica	Purple Helmet Orchid

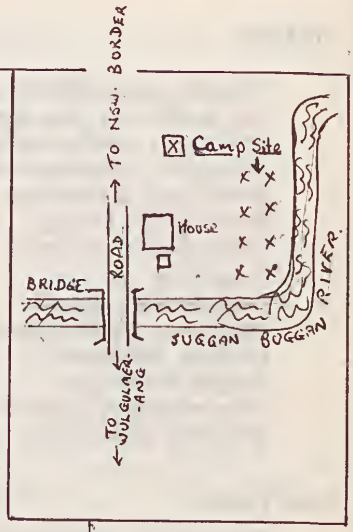
Other introduced species:

Carduus pycnocephalus	Shore Thistle
Cirsium lanceolatum	Spear Thistle
Hypochaeris radicata	Flatweed/Cats Ear
Trifolium arvense	Hare's Foot Clover
Verbascum blattaria	(Moth) Mullein
Datura stramonium	Thorn Apple
Conium maculatum	Hemlock

REFERENCE:

'The Flora of Suggan Buggan'
W. Hunter. Vic. Nat. Vol. 58. No. 41.





PLEASE NOTE:

The trip to Suggan Buggan 26.12.72. has been calcelled due to the extreme fire risk.

WHAT BUTTERFLY WAS THAT? Review

In reviewing any new publication, the temptation to direct comparison with earlier works is always present. Here, on the occasion of the reincarnation of an old friend, such comparison is more than permissible, it is invited.

Appearing as it does so soon after the publication of two other major works, the lay reader, the budding entomologist, and perhaps even more, the bookseller, will have some doubts as to its necessity and worth. It is, and was intended to be, above all a manual. It does not aspire to the geographic coverage and lavish illustrations of Bernard D'Abrera's "Butterflies of the Australian Region". Nor in any sense does it attain the charm and aesthetic appeal of Charles McCubbin's "Australian Butterflies". One is, therefore, immediately tempted to enquire just what it has that qualifies it as a 'must'.

Primarily of course any manual must be handleable. It must therefore be concise yet comprehensive and authoritative, and for efficient use must be systematic, well-indexed and cross-referenced. "Butterflies of Australia" does not fail in any of these respects, although location of the irregularly-placed plates (e.g. "facing p. 12") might well have been provided in the text for each species.

The several excellent sections dealing with structure and early stages, biology, behaviour and physiology contain a wealth of both fundamental and advanced information, presented in a manner which both young and old, whether they be entomologically-inclined or merely curious, must find fascinating, instructive and thought-stimulating.

With regard to the nomenclature employed, "Butterflies of Australia" can only be regarded as a taxonomist's picnic, and my first reaction was that this type of publication was no place in which to present such numerous and sometimes major changes. Yet, in reality, a publication which at some time or other will be studied or referred to by entomologists at all levels, and which is available to all, must be the logical medium whereby beginner and senior entomologists are put on a sound, up-to-date and equal footing in this important respect. Ideally, perhaps, previously-employed taxa could have been stated as synonyms in more cases (e.g. in the case of *Freyeria trochylus* which was formerly included in the genus *Chilades*), and brief explanations provided for minor changes where the reason is not immediately apparent, as in the case of the change from *Toxidia peroni* to *T. peron*.

Plant names do not appear to have received such meticulous attention in any uniform fashion. It is difficult to accept *Exocarpos* (Gk.) in place of *Exocarpus* (Lat.) while *Lysiana exocarpi* (Lat.) remains. My own personal reaction, and I must emphasise that it is my own, is also

to reject such spellings as *Clerodendrum* and *Euodia* as unnecessarily pedantic alternatives for the long-accepted *Clerodendron* and *Evodia*. The identification and taxonomy of plants will inevitably at times involve personal opinions, and the implication (p. 453) that McCubbin is incorrect in identifying the normal Victorian foodplant of *Hypochrysops byzos hecalius* as *Pomaderris apetala* instead of *P. aspera* is an unfortunate example of such, when we are referred to the former by most Victorian botanists. From the brief description of habitat quoted, it appears that the foodplant of *Neolucia hobartensis* may have been incorrectly identified, and the spelling is unique. These however are trivial points in such a fine publication, in which a notable feature is the virtual total elimination of typographical errors, which proved a nightmare to both McCubbin and D'Abrera at the mercy of oriental printers who insisted on ignoring corrected galley proofs.

Again in the realm of personal opinion, it seems a little strange these days to find all seven related subfamilies included as such under the *Nymphalidae*, and to re-unite *Ogyris hewitsoni* with *O. amaryllis*. These are, again, rather trivial points, and certainly will not delay any entomologist in making identifications at the specific level. Illustrations, as might be expected, are excellent, and two additional colour plates have been added to include some species not formerly illustrated. In the particular copy examined, several of the colour-plates were rather over-printed, and consequently a little harsh and unrealistic. The small maps, with their cryptic little dots, showing the distribution of each species, are an excellent innovation, although it was noted in one or two cases that the indicated distribution did not entirely correspond with that stated in the text.

Under the heading 'Collecting and Study' we again find a wealth of information ranging from the design and construction of gear and normal collecting and rearing hints, to the preparation and mounting of dissections, and frequent indications of avenues for future investigation and research. This section is followed by an appendix of miscellaneous late information and an excellent glossary. The final sections include a list of all recorded foodplants - regrettably not distinguishing the native species from introductions - a select bibliography and a clear index without any obvious omissions, except plant names. It seems a pity that the documentation of so many food plants has provided nothing more than names - names of plants which, in so many places, are known to few botanists. Had space permitted, a food plant and habitat description, with even black and white illustrations would have been welcome. It is to be hoped that some publisher may see fit to make good this largely neglected field at an early date.

From all of which one may assume that about all "Butterflies of Australia" has in common with "What Butterfly is That?" are reproductions

of the 1932 illustrations, the text being entirely re-written, and as up-to-date as today. It is a credit to the authors, who must be justifiably proud of the publication. It will fit nicely into the glove-box or rucksack. The one serious criticism remaining is the unjustifiably high price, a penalty that must apparently be paid for keeping production all-Australian. Save like mad and you should have sufficient in the kitty by the time it is remaindered!

W.N.B. QUICK

"Butterflies of Australia", Common and Waterhouse, published by Angus & Robertson. 1972.

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NATIONAL MUSEUM
16 FEB 1973
OF VICTORIA

THE VICTORIAN ENTOMOLOGIST

Journal of
The ENTOMOLOGICAL
SOCIETY of VICTORIA

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The ENTOMOLOGICAL SOCIETY of VICTORIA

Membership

Any person with an interest in entomology shall be eligible for Ordinary Membership. Members of the Society include professional, amateur, and student entomologists, all of whom receive the Society's bi-monthly journal, the "Victorian Entomologist". Excursions are arranged to areas of topical interest at intervals, mainly during the warmer months. Lectures by guest speakers or members are a feature of most meetings, at which there is also ample opportunity for informal discussion between members with like interests.

Objectives

The aims of the Society are:

(a) to stimulate the scientific study and discussion of all aspects of entomology,

(b) to gather, record, and disseminate knowledge of all Australian insect species,

(c) to compile a comprehensive list of all known Victorian insect species, and

(d) to bring together in a congenial and scientific atmosphere all persons interested in entomology.

Meetings

The Society's meetings for 1973 will be held at Clunies Ross House, National Science Centre, 191 Royal Pde., Parkville, at 8 p.m. sharp, on the second last Friday of even months, commencing with the Annual General Meeting in February. Visitors are always welcome.

Annual Subscriptions:	$
Ordinary Member	3.00
Country Member	2.00
Associate Member	1.00
Junior or Student	1.50

(Associate members do not receive the journal.)

Notwithstanding the rates shown herein, rising costs and rates of postage, &c. may at some stage necessitate an increase in annual subscriptions

The statements and opinions expressed in articles herein are the responsibility of the respective authors, and do not necessarily indicate the policy of the Society.

NATIONAL MUSEUM OF VICTORIA
15 FEB 1973

February, 1973. 'The Victorian Entomologist'

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Copy for publication in the next issue (Vol. 3; No. 2) should be in the Editor's hands not later than Tuesday, March 13. Material received after this date, 'Service to Members' section excepted, may be held for inclusion at a later date.

ENTOMOLOGICAL SOCIETY of VICTORIA

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P.R. Officer) Box 174 Ferntree Gully. V. 3156. Phone 231-2233

Diary of Coming Events

February 16th. (Friday). ANNUAL GENERAL MEETING. Election of Office Bearers for 1973. Please note new venue.

April 27th. (Friday). Dr. Ettershank (Monash University) on Ants and General Entomology of New Mexico.
June 22nd. (Friday). Mr. H.B.Wilson, (Sen.Ent'st.,Plant Res. Inst.) Insect Telergones and Pheromones.
August 24th. (Friday). Mr. A. Neboiss, (National Museum of Vic.) on Caddis Flies.
October 19th. (Friday). Dr. D.M.Churchill, (Royal Botanic Gdns.) Recording of Plant Distribution Data in Victoria and Aust.
December 14th. (Friday). Members Night.
All Meetings Commence at 8.00 p.m.

COUNCIL MEETINGS:

7.30 - 11.00 p.m. March 9, May 11, July 13, Sept. 14, Nov. 9.
at Clunies-Ross House, 191 Royal Pde., Parkville.

EDITORIAL

The year 1972 was one of change in the Society. At the instigation of the Secretary, Miss Sue Beattie, and the Council, a number of new offices were introduced, a move that greatly increased the activity, both internal and external, of the Society. The first steps were taken to organise a grid-mapping survey of the Victorian insect fauna, a scheme that will be of great value to conservation and scientific bodies. Membership increased by an unprecedented amount in 1972 and it is hoped this trend will continue.

Unfortunately, another change that came at the end of the year was the announcement by Miss Beattie of her resignation from the position of Secretary. The instigator of almost all the changes of the past two years, Miss Beattie has probably worked harder, and done more for the Society than anyone else in recent years. We shall be very fortunate to find someone equally efficient and forward-looking to replace her. We all hope that her hard-earned retirement will give her more time for field-work and relaxation.

The most important national entomological event of the year was the XIV International Congress of Entomology held at the Australian National University in Canberra. Entomologists from 64 countries attended and, judging from the large number of papers presented, and the many informal meetings held, the Congress was very successful. Unfortunately, few of our members managed to attend; our official delegate was Mr. A. Neboiss, and our Public Relations Officer, Mr. J.F.Hutchinson, distributed information sheets and copies of the 'Victorian Entomologist'.

Last year saw many changes, too, in this Journal. The Publications Committee was stabilised, a regular format was decided upon for the journal, and editorial policies were formulated. Just when everything seemed organised, however, it became necessary to change the method of production of the Journal. This has caused some upsets and apprehension. This issue represents a compromise which it is sincerely hoped will meet with the approval of those most respected members of long standing who were, quite naturally, the most apprehensive about the Journal's future course. The Editor and Publications Committee trust that these members will note that, as far as constitutionally possible, their suggestions have been adopted, and the Journal produced on schedule. Now, the way it is filled is up to our author-members.

Finally, the Editor and Publications Committee would like to join other members in welcoming home our President, his wife, and family, who recently returned from the United Kingdom, although not necessarily in that order. Welcome home Charles.

February, 1973. 'The Victorian Entomologist'

Reports and Notices from the Secretary, Miss S.Beattie.

General Meeting: Friday, December 15th., 1972.

The Deputy President, Mr. J.C. Le Souëf, chaired the meeting which was attended by 35 members and friends. A special welcome was extended to Mr. & Mrs. Clarke. Apologies were received from Messrs. G. Burns and T.E.A.Morton.

The minutes of the October were read and confirmed, moved by Mrs. Le Souëf, seconded by D. Holmes.

Correspondence was received from

1. Aust. Entom. Soc., News Bulletin Vol. 8: Part 4. 1972.
2. Aust. Entom. Soc., enquiring whether the Society wishes to receive only the News Bulletin at a reduced fee, or both the Journal and the Bulletin at the normal fee.
3. Mr. J. Vesco, 14 bis Montplaisin, 84.600 Valréas, France, who wishes to exchange Australian butterflies with those of France, Japan, Canada and the U.S.A.
4. Land Conservation Council asking for information on the Arthropod fauna (Insects, Spiders, Crustaceans) of various L.C.C. study areas throughout the state. (See request elsewhere in Journal -- ed.)
5. Entom. Soc. of Q'land News Bulletin, No. 92: Dec. 1972.
6. The Secretary read a note of thanks received from Mrs. Norman Wakefield for the letter of condolence the Society sent on the death of her husband.

Excursion.

It was decided to cancel the excursion to Suggan Buggan this December (1972) due to the extreme fire danger throughout the state.

Secretary's Annual Report:

The Secretary announced her retirement, and read her report, a synopsis of which follows the Minutes.

Editor's Report:

The Editor thanked the Secretary for all she had done for the Journal, and explained that a new way of producing the Journal must be found, listing the advantages and disadvantages of various methods. This led to an open discussion.

Treasurer's Report:

The Treasurer announced a balance of $40.80, the Society's membership standing at 76, 26 of whom have paid the Junior or Student subscription of $1.00 .

The Secretary suggested that all subscriptions be increased in 1973 to provide extra finance for the Society. This suggestion was not carried.

The Treasurer announced an intended proposal of a motion at the February Meeting that Junior/Student subscriptions be raised to $1.50

Mr. F.Hallgarten proposed a motion that no further increase in subscription be introduced following the Junior/Student subscription increase, for the next 12 months. This motion was passed.

Matters Discussed:

(a) The retirement of the Secretary meant finding another source of printing the Journal. Other methods of production were discussed.
(b) The possibility of the Society obtaining its own printing equipment was discussed. It was decided that because of the financial situation, the Society could not afford this purchase.
(c) The Editor would enquire into 'outside' printing facilities.
(d) A motion was proposed by Mr. A.Neboiss, seconded by P.Kelly, that the 'Victorian Entomologist' Journal be continued in its present format in regular bi-monthly issues, and that the number of pages would depend on the finances available. This motion was passed unanimously.

Mr. Le Souëf thanked the retiring Secretary on behalf of the Society for all the work she had done in re-organising the Journal and the Society, and closed the meeting wishing all members good collecting in the New Year.

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'Service to Members'

Several members have suggested that a small section of the Journal be devoted to listing requirements and surplus items with which entomologists are sometimes confronted. This section will be incorporated in the next issue (Vol.3: No.2).

The charge to be made for this service is 5 cents per line, the service being made available to financial members and subscribing organisations ONLY. Deadline for copy to be in the Editor's hands will be the 20th. day of the month prior to publication. Insertions initially will be in order of receipt. Advertising of insects for sale will not be accepted for this section, and, subject to approval at a general meeting, will be restricted to paid advertisements by bona fide commercial breeders.

February, 1973. 'The Victorian Entomologist'

The Secretary's Annual Report.

Dear Members,

In this my last report as Secretary of the Entomological Society of Victoria, I would like to disclose to you the purpose of the changes which have taken place within the Society over the last 18 months, and what my intentions were for the future betterment of the Society.

Initially the function of the past Secretary was to act both as Secretary and Editor. It became apparent that the position of Editor was a full-time responsibility, and upon the retirement of the Secretary/Editor, it was decided to prevent a recurrence of this situation by re-organising the Society, placing more work on Councillors and setting up an Editorial Committee.

The rôle of the Editorial Committee is an important one, for it is their responsibility not only to construct a newsletter which provides valuable information and interesting reading, but also to help prevent serious mistakes of fact or interpretation, which may bring the Society under criticism. The Newsletter provides a means of communication with country members and those outside the Society, and tells people who we are and what we do.

For the Newsletter to run most efficiently the Society must procure its own printing equipment. This of course means heavy expenditure -- finance which the Society has not yet acquired. It is my wish that in the near future a special fund be set aside to procure the necessary printing equipment.

In retrospect, 1972 was a successful year for the Society. There was a considerable increase in membership, especially junior, and an increased attendance at general meetings. In an attempt to rebuild the financial structure of the Society, the cost of postage was reduced by registering the newsletter, and to cut running costs further, the general meetings of 1973 are to be held at Clunies-Ross House free of charge.

In conclusion, I would like to thank those members who have assisted in the reorganisation, especially those who gave me the courage to continue, and finally to thank the authors who help keep the Society together. I hope in future more members will write on a greater variety of subjects. The Editorial Committee have a big job ahead of them. Remember, this is your Society; help them help you to keep it !

Best wishes for the Coming Year,
SUSAN BEATTIE,
(Retiring Secretary)

Honorary Treasurer's Report.

Statement of Receipts and Expenditure for the Year Ending December, 1972.

Credit bal. b/forward 21.27

Receipts.		Expenditure.	
Interest recd. 1972	1.32	Refund/oversubscript.	3.00
Subscriptions. 1972	138.00	Hon. Sec.'s expenses, (printing, tel., post, sundries)	42.09
Donations.	3.50	Aust. Ent. Soc. Subs.	10.00
Sales Victorian Ent., Check List.	4.20	Rent. Library Council.	20.00
		Editorial expenses.	11.81
		Typist -- Journal prep.	30.25
		Stencil blocks	8.60
		Paper -- Boomerang Trading Co.	10.00
		Hon. Treas. expenses (cheque exchange, &c.)	74
		Credit bal. Bank.	31.80
	168.29		168.29

Report from the Publications Committee.

Matters Discussed at a meeting held December 28th.

1. It was decided that, in accordance with the constitution, an issue of the Journal for February, 1973 should be produced if possible.
2. Means of producing the Journal were discussed.
3. It was decided, after an estimate of the production and distribution costs of the Journal had been made, that the nominal price of the Journal must be raised to 40c per copy.
4. It was decided that classified advertisements by members would be accepted for the Journal at a cost of 5c per line.

CORRECTION !

The entry for Mr. Malcolm Moss (Vol. 2, No. 5, List of Financial Members) should read 57 Paton Crescent, Boronia, 3155, and his interest as FORMICIDAE not DIPTERA.

Public Relations Officer's Report

In order to increase membership of the Society, and facilitate reply to those seeking information on the Society, an information sheet has been prepared, giving relevant information on eligibility for membership, the aims of the Society, benefits of membership, plus a list of subscription rates for various types of membership available, and application form. These are available from:

James F. Hutchinson,
C/- Scoresby Horticultural Research Station,
P.O. Box 174
FERNTREE GULLY. V. 3156. Phone 231-2233

At this early stage it is difficult to assess the success of these sheets, but it is encouraging to see membership of the Society steadily increasing.

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Honorary Librarian's Report

The Society currently subscribes to three entomological journals, viz. The Journal of the Australian Entomological Society, Teen International Entomology Group Newsletter, and Newsletter of the Entomological Society of Queensland. In addition to these publications, the Society has a number of reprints of various articles. These have been indexed, and a photocopy of the abstract placed in the card index system.

If any members have reprints (entomological subjects) which they no longer require, a copy would be appreciated for addition to the library. A list of all acquisitions will be printed in order that members shall be kept up-to-date with availabilities. A copy of any article can be supplied to order at 5c per page. Library lists are available on request.

This is your library. If there is any publication you consider should be added, let a member of the committee know, giving where possible the name of the publication, the publisher, and the price, and the merits of the publication will be considered.

Mr. Bob Condron has donated a number of papers, dealing in particular with the taxonomy of moths, and a detailed list of these papers, for which the Society is extremely grateful, is in course of preparation.

Ecological Survey of Dartmouth Dam Area.

By A. Neboiss †

A new and extensive invertibrate survey was started on January 3rd. this year to investigate, and produce a report of, the Dartmouth Dam inundation area. This survey is part of a general ecological study to be conducted by the University of Melbourne, the Department of Fisheries and Wildlife, and the National Museum of Victoria during the next 18 months, and is planned to include the geology of the area in addition to the flora and fauna.

The dam across the Mitta Mitta River will be more than 150m. (almost 500') high, and will span a narrow part of the river valley about 22km east of the Mitta Mitta township. It is estimated that it will take about 4 years to fill, the waters then reaching back as far as Gibbo River about 16km north of Benambra, and the Dart River close to the Omeo-Nariel Road, thus forming the third largest water storage in Victoria.

In the field of entomology, main interest is concentrated on water insects, for this is the biota which will experience the most changes.

It would be greatly appreciated if any members who have collected insects in the area would allow their collections to be inspected, and notes taken for inclusion in the survey. Specimens will be returned to the owners following examination.

† Curator of Insects, National Museum of Victoria, Melbourne.

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Candalides consimilis goodingi

A number of sightings, and several captures of this butterfly in the Dandenong Ranges in recent years may perhaps only indicate a new awareness of its presence in this area, although it is astonishing that it should have eluded the many competent entomologists who have collected there extensively.

If, as has been recorded for NSW., Tieghemopanax is a host in Victoria, it is not inconceivable that some increase in numbers and distribution may be due to adoption of Common Ivy, Hedera helix, as a host. This plant has regrettably been permitted to invade forests in the area in recent years.

List of Insect Species Taken Dec. 3rd., 1972 near Mt. Stirling, Victoria, at 2750' (910m).

By J.F.Hutchinson ‡

LEPIDOPTERA:

Pieridae: Anaphaeis java teutonia (Fabr.) 1776 (1, very worn)
Pieris rapae (L.) 1758.
Nymphalidae: Vanessa kershawi (McCoy) 1868
Lycaenidae: Pseudalmenus chlorinda zephyrus W.&L. 1914
(1 specimen. tail on both hind wings missing.)
Candalides heathi alpinus Waterhouse 1928.
(5 specimens of a host plant, Parahebe derwentiana (Scrophulariaceae) brought back.
Zizina otis labradus (Godart) 1819
Agaristidae: 1 species, not yet determined.

COLEOPTERA:

Curculionidae: 1 unidentified sp.
Chrysomelidae: Paropsis. 3 unidentified spp.
Cleridae: 1 unidentified sp.
Coccinellidae: 1 unidentified sp.

(Coleoptera obtained by beating Eucalypt foliage.)

‡ Address p. ii --- --- --- ---

Additional to the above records of Mr. Hutchinson, the following butterfly species have been taken in the same area:

Hesperidae: Pasma tasmanica (Misk.) 3.xii.72 (N.Q.)
Nymphalidae: Vanessa itea (Fabr.) 8.i.73 (A.B.)
Geitoneura klugi klugi (G-M) 8.i.73 (A.B.)
Heteronympha cordace cordace (Geyer) 8.i.73 (A.B.)
Lycaenidae: Neolucia agricola agricola (Westw.& Hew) 8.i.73 (AB)
Neolucia hobartensis hobartensis (Misk.) 3.xii.72 (NQ).
(The former around Daviesia, the latter presumed to be breeding on Epacris paludosa at the riverside.)

CONTRIBUTIONS TO THE JOURNAL

The Editor urgently requires short scientific papers, 'popular' articles, or paragraphs on any aspect of entomology. These should preferably be typed and double-spaced. It is recommended that scientific papers follow CSIRO guidelines, but this is not necessary for other articles. Notes and observations on groups other than butterflies would be particularly welcome.

February, 1973. 'The Victorian Entomologist'

Early Stages of the "Mountain Blue",

Neolucia hobartensis hobartensis (Miskin) 1890

(LEPIDOPTERA - Lycaenidae)

By W.N.B. Quick ⊕

Appearing on the wing early in January, but often still plentiful well into March, few Lycaenids - "Blues" - are more characteristic of the alpine herbfields than this inconspicuous little butterfly.

At an altitude of 1500 - 1700m. (4500'-5000'), its host-plants, Epacris paludosa (E. bawbawensis) and E. petrophila abound in the sphagnum-heath fringes of the tarns criss-crossing the alpine meadow, the latter species sometimes extending to some distance from the wetter areas.

Both are low-growing heaths with conspicuous, slightly- but sweetly-fragrant white flowers. E. paludosa, the earliest to flower, has harsh and rather prickly foliage not unlike that of E. impressa (Common Heath), while E. petrophila is distinguished by its very small, closely-set and blunt leaves, the young twigs with a film of satiny-grey down.

On Mt. Baw Baw at 1550m. (4700'), N. hobartensis appears to favour E. paludosa as host, but on Echo Flat at Lake Mountain this plant does not produce young shoots immediately after flowering, and E. petrophila becomes the major host.

The eggs, deposited singly near the foliage tips, are mandarin-shaped and appear to consist of three 'layers', with the circumference of each layer conspicuously scalloped, and the flat top patterned with shallow indentations. Eggs deposited early in summer appear to produce a second brood, while those laid late in the season do not hatch until the following spring.

If flowers or flower-buds are present, these are attacked by the smaller larvae in preference to foliage, and very young larvae are often found within the perianth. The older larvae feed almost exclusively on foliage, and in daylight. They are not attended by ants. While feeding, the larvae cling to the outermost tip of a lower leaf, assuming an extraordinary jelly-bean-like attitude, without any attempt at concealment.

The mature larva is bright apple-green, with the characteristic Lycaenid 'herring-bone' pattern, and two lateral

⊕ 20 Alimar Rd., Glen Waverley. V. 3150.

lines, yellowish. Length 8 - 9 mms. Larvae, when initial food supplies were consumed, transferred readily to Epacris microphylla. At no time was any tendency towards cannibalism observed. Rather to the contrary, larvae showed a tendency to form small groups, and pupated in close proximity.

At first greenish, later creamy-brown with a fine mid-dorsal line, and paired streaks laterally on the thorax and abdomen, black. Smooth except for a few minute scattered hairs on the anterior end. Length 6mms. Spiracles black. All pupae reared were attached to small twigs or occasionally to a leaf. The pupal duration, for a temperate-zone species, is very brief, one butterfly emerging after only eight days. The butterfly closely resembles N. agricola which may be taken in the same area, and as in that species, neither sex shows any trace of blue colouration, the uppersides being wholly dark brown.

Both Epacris paludosa and E. petrophila are attractive small garden plants, and with a little shade, thrive in naturally acidic soils, or soils on which a thick sawdust mulch has been used. Germination from seed is impracticable for the inexperienced, and cuttings in a cold-frame seem a more rewarding method for propagation. The butterfly is seldom found far from its host plant, and because of its small size, the establishment of breeding colonies may be practicable.

Notes on the Early Stages of the "Rayed Blue", Candalides heathi heathi (Cox) 1873

(LEPIDOPTERA - Lycaenidae)

By W.N.B. Quick †

Although J.A. Kershaw had recorded Veronica (now Parahebe) as a host plant of this species at Trafalgar (V.) prior to 1907, and Parahebe derwentiana has more recently been quoted as a host in the Brindabella Ranges, NSW.,(1) it was not until early December, 1972 that I was able to make my own observations. In actual fact, I had not until then ever taken the species in Victoria. Charles McCubbin recorded (2) one or two specimens collected at night near Howman's Gap, settled on Pimelea. Plantago spp. and Westringia rosmarinifolia have also been recorded as host plants in NSW.

† 20 Alimar Rd., Glen Waverley, V. 3150.

Early in December 1972 an excursion to the upper reaches of the Howqua River, where Mr. D.F.Crosby had previously taken the species, yielded a number of specimens of both sexes. Parahebe derwentiana (Veronica) was everywhere, as also was Plantago. Pimelea was represented in the immediate vicinity it seemed by only one solitary and overgrown specimen of P. ligustrina on the river bank. No trace of any species of Westringia was expected or found.

During the early afternoon a female Candalides heathi was noticed hovering around flowers of a lush clump of the Veronica, but was not seen to oviposit. A little later a second insect, also a female, was observed to be paying some attention to another clump of Veronica, this clump without flowers..... there were however no signs of any intention to oviposit. Much later in the afternoon a very substantial and mature patch of Veronica was noticed on a slope lit by the afternoon sun, and on this a butterfly was at last seen ovipositing. My entry into this patch to collect the egg disturbed what must have been 15 or 20 other butterflies of the same species, and a search of several plants disclosed many eggs, some of which had already hatched.

The eggs are deposited singly, usually in the leaf axils, but also on stems, upper and lower leaf-surfaces, and occasionally on flower-spikes. They are clearly visible to the naked eye. Under moderate magnification they appear mandarin-shaped, coarsely and irregularly pitted, with raised ridges separating the pits.

Young larvae from eggs laid on or near flower-spikes continue feeding on these during the early instars. Larvae from eggs on other parts of the plant feed on foliage alone, and mainly at night. Short vermiform patches are eaten from the under-surface of the leaf, leaving the upper cuticle intact. The larvae rest in these eaten areas, and viewed from above the overall translucency of the leaf appears unaltered. This habit persists until the final instar, the larvae consuming progressively larger areas as their body-area increases. During the final instar, unless reduced to subsisting on very tough old foliage, larvae adopt the more "conventional" approach, and eat irregular sections from the leaf edges.

Mature larvae are bright green, minutely bristly but with a conspicuous pair of pale setae laterally on each segment. Thoracic segments prominently separated, almost tuberculate. Posterior segments markedly flattened, and

with the extensile dorsolateral organs very prominent. They are half-heartedly attended by several species of small black ants, but do not appear to be attacked by fungi in the absence of any ants. No tendency to cannibalism was noticed amongst the larvae reared. As pupation approaches, dull reddish-purple markings become apparent in the characteristic dorsal herring-bone pattern. Length 14-16mm.

The pupa is typical of those of other members of this genus, narrowly flanged at the anterior end, but very markedly so on the abdominal segments, which are produced into a prominent and serrate dorsal ridge. A pair of deep dorso-lateral pits between the thoracic and abdominal segments. Variable in colour according to the pupal surroundings, but normally some shade of brown or black. Pupation appears to take place in debris at the base of the plant, or in a dead leaf on the plant itself. Length approx. 12 mms.

It will be noted that this butterfly has been referred to as Candalides heathi heathi rather than the alpine race C. h. alpinus Waterhouse 1928. Variation within the series taken included examples typical of both, and may indicate that a cline exists between these two apparent races. It was not found possible to induce larvae to accept Plantago lanceolata as an alternative food, as reported by E.D.Edwards (3) with larvae from the Brindabella Range, NSW.

(1) Common & Waterhouse in "Butterflies of Australia", Angus & Robertson, 1972. P.422.
(2) Unpublished data.
(3) Common & Waterhouse in "Butterflies of Australia", Angus & Robertson, 1972. P.422.

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Country Members.

There is a tendency for city members to overlook the fact that our country members are fortunate enough -- in some respects -- to live in districts which we may visit at the best on infrequent occasions. In consequence, they often have a much broader knowledge of the insect fauna within their own environs, and could add considerably to our knowledge of the distribution and early stages of many insects. The editor would welcome notes of any kind from country members, who form a valuable section of the Society's structure.

Vol. 3: No. 2. April, 1973.

NATIONAL MUSEUM
30 APR 1973
OF VICTORIA

THE VICTORIAN ENTOMOLOGIST

Journal of
The ENTOMOLOGICAL
SOCIETY of VICTORIA

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40c

The ENTOMOLOGICAL SOCIETY of VICTORIA

Membership

Any person with an interest in entomology shall be eligible for Ordinary Membership. Members of the Society include professional, amateur, and student entomologists, all of whom receive the Society's bi-monthly journal, the "Victorian Entomologist". Excursions are arranged to areas of topical interest at intervals, mainly during the warmer months. Lectures by guest speakers or members are a feature of most meetings, at which there is also ample opportunity for informal discussion between members with like interests.

Objectives

The aims of the Society are:

(a) to stimulate the scientific study and discussion of all aspects of entomology,

(b) to gather, record, and disseminate knowledge of all Australian insect species,

(c) to compile a comprehensive list of all known Victorian insect species, and

(d) to bring together in a congenial and scientific atmosphere all persons interested in entomology.

Meetings

The Society's meetings for 1973 will be held at Clunies Ross House, National Science Centre, 191 Royal Pde., Parkville, at 8 p.m. sharp, on the second last Friday of even months, commencing with the Annual General Meeting in February. Visitors are always welcome.

Annual Subscriptions:	$
Ordinary Member	3.00
Country Member	2.00
Associate Member	1.00
Junior or Student	1.50

(Associate members do not receive the journal.)

Notwithstanding the rates shown herein, rising costs and rates of postage, &c. may at some stage necessitate an increase in annual subscriptions

The statements and opinions expressed in articles herein are the responsibility of the respective authors, and do not necessarily indicate the policy of the Society.

NATIONAL MUSEUM
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Copy for publication in the next issue of the Journal should be in the hands of the Editor not later than Sunday, May 13. Material received after this date will be held over for inclusion at a later date.

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Diary of Coming Events

April 27th., 1973. Bi-monthly meeting. Dr. Ettershank (Monash University) on 'The Ants and General Entomology of New Mexico.'

May 26th., 1973. (Saturday) Late Afternoon Barbecue Kinglake West, followed by night-light collecting. Details elsewhere.

June Excursion. Date to be discussed at April meeting. Phillip Island to attempt location of over-wintering area for the Wanderer Butterfly.

June 22nd., 1973. Bi-monthly meeting. Mr. H.B.Wilson, Senior Entomologist, Plant Res. Inst., on 'Insect Telergones and Pheromones'.

Subsequent Meetings: August 24th., October 19th., December 14th.
(For venue refer inside front cover)

COUNCIL MEETINGS:

7.30 - 11.00 p.m., May 11, July 13, Sept. 14, Nov. 9th., all at Clunies-Ross House, 191 Royal Pde., Parkville.

EXCURSIONS:

Notes on proposed excursions will be located elsewhere.

Reports and Notices.

ANNUAL GENERAL MEETING: Friday, February 16, 1973, at Clunies-Ross House, National Science Centre.

The President, Mr. C.W. McCubbin, chaired the meeting which was attended by 28 members and friends. Apologies were received from Miss S. Beattie, Miss E. Matherson and Miss H. Malcolm. Minutes of the December meeting were read and confirmed. Acceptance moved by Mr. F. Hallgarten, seconded Mr. R. Condron.

Correspondence was received from:

1. "Banjora" of the "Weekly Times", requesting Membership Application forms, and advising of the recent death of Mr. Norman McCance.
2. Mr. Paul H. Carlson, Florida Agricultural and Mechanical University, who requested an application form.
3. The General Committee of the Australian Natural History Medallion, 1973, with dossier information and nomination form.
4. Mr. Donald Baumgartner, Cicero, Illinois, USA., requesting information regarding Society membership.
5. J. McAllister, Library of New South Wales, requiring Journals Vol. 1: No. 1, et seq.
6. P.B.Carne, Secretary, The Australian Entomological Society, giving details of an essay award for third-year University students, proposing to follow an entomological profession, and inviting suggestions for suitable topics.

Election of Office Bearers for 1973.

The Immediate Past President, Mr. P. Kelly, took the chair for the election of the Office-Bearers for 1973. The retiring President, Mr. Charles McCubbin, was re-elected for a second term of office. Mr. N. Quick and Mr. S. McEvey were elected to the positions of Vice-president and Hon. Secretary respectively, all other Office-bearers being returned to office. Election of additional committee members was deferred until the April General Meeting.

Matters Discussed:

Mrs. Le Souëf moved, and Mr. McCubbin seconded, that the Society should hear reports from the Committee at General Meetings enlightening members of committee business and committee meeting activities.

The Treasurer moved that the annual subscriptions for junior or student members be increased by 50 cents to $1.50, with other subscriptions remaining unaltered. The motion was seconded by Mr. Hallgarten, and carried.

Mr. N. Quick announced an alternative method of reproduction of photographs for authors requiring illustrations. The process will reduce authors' expenses by up to $3.00.

Report of the ANNUAL GENERAL MEETING. (Cont. from previous page.)

Exhibits:

Mr. R. Condron exhibited some insects collected in the Big Desert, including grasshoppers and some insects collected at night.

Mr. S. McEvey's exhibit of some butterflies collected in Cairns last January included some interesting specimens of Narathura wildei (Small Oakblue) and Graphium macfarlanei, the 'Green Triangle'.

Mr. J. Hutchinson exhibited Coleoptera from the Brisbane Ranges collected on October 22, 1972 on flowering Leptospermum and Eucalypt foliage. Representatives of the following families were displayed: Chrysomelidae (7 spp.): Elateridae (3 spp.): Buprestidae (3 spp.): Curculionidae (5 spp.) and Cerambicidae (1 sp.) He also displayed specimens from the Big Desert, taken on November 6th, 1972, again from Leptospermum flowers, and representing the following families: Buprestidae (16 spp.): Scarabaeidae (4 spp.) Cleridae (5 spp.): Curculionidae (4 spp.) and Coccinellidae (2 spp.).

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COUNCIL MEETING. March 9th., 1973

Matters Discussed:

1. It was proposed that the following amendments and changes be made to the constitution. (Motion to be put to the next General Meeting.)
   Section 7 (b): Amend the phrase ....."and eight other members" to read ...."and up to eight other members".
   Section 5. Terminate first sentence by adding the words "with the approval of a general meeting".
   The following additions to the Constitution are proposed:
   "The Editor shall be appointed by the Committee, and in turn the Publications Committee is to be co-opted by the Editor to the approval of the Society's General Committee."
   "The Editor and the Publications Committee shall accept responsibility for content, format and costing of the Journal, with the obligation to refer controversial matters to General Meetings."

2. It was proposed that the following motions be put to the next general meeting:
   "That advertisements in the Journal be accepted from bona fide commercial breeders only. (In respect of advertisements of insects for sale.)

   "That the Treasurer be authorised to pay any expenses approved by the General Committee."

3. The following EXCURSIONS were proposed for 1973-4.
   May, 1973: Kinglake West.
   June: Winter trip to Phillip Island.
   Mid-October: Inglewood. (Whipstick Scrub).
   November: (Cup Weekend). Big Desert.
   Late November: Mt. Macedon.
   Christmas-New Year: Suggan Buggan.
   Late January, 1974: Extended trip to eastern Victorian rain-forest and Cape Everard.
   Mid-February: Inglewood. (Whipstick Scrub).

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Report of PUBLICATIONS COMMITTEE MEETING. 16.3.'73.

Matters Discussed:

1. The Publications Committee shall consist of: Editor, three regular members, and ex-officio members as deemed necessary.

2. From time to time the Publications Committee shall publish a list of Juniors, other than members, together with their interests, in order that our Society's junior members may, if they wish, correspond, or exchange with, those other youngsters. This has been made possible by liason with "Banjora" of the "Weekly Times", who will forward names for inclusion. In this regard, Ray Besserdin has consented to act as a Liason Officer, preparing lists &c. for the Editor. His address is 35 Quinn St., Heidelberg, V. 3084.

3. Charges for various types of advertisements were determined, and a Rate-card has been produced for intending advertisers.

4. The Publications Committee shall meet on the third Friday of odd months, i.e. exactly alternating with General Meetings.

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Honorary Librarian's Report.

Additions to the Library:

"A New Race of the Butterfly *Ogyris orcetes*." W.N.B.Quick. (Reprint. Vic. Nat. 89 (4): 107-112. April, 1972.)

"Forestry in Victoria"
"Forests of Victoria"
The former was prepared for the Eighth All Australian Timber Congress which was held in Melbourne in April 1972. Basically it is a review of forestry activities and objectives. The latter is reprinted from the Victorian Year Book 1972, No. 86. It lists the forests in Victoria which come under the jurisdiction of the Forests Commission of Victoria, with a short note on each. Both donated by the Forests Commission of Victoria, Melbourne.

Missing Books:

The following two journals are missing from the library:
J. Aust. ent. Soc. 10 (2) June 1971.
J. Aust. ent. Soc. 11 (2) June 1972.

It would be appreciated if members would check their shelves to see if they have either or both. They may be handed to me at the next Meeting, or posted to the address on page (ii).

--- --- --- ---

A Rare Sighting at Bundaberg, Q.

By Garry Sankowsky. †

On December 12, 1972 the author visited a small scrub about 20miles (30 km.) north of Bundaberg, and was surprised when a perfect specimen of Hypolimnas alimena lamina (Blue-banded Eggfly) was netted. In 15 years of collecting in the Bundaberg area, this species has never before been sighted.

A few days later the same spot was re-visited and two further specimens sighted. After these sightings it was assumed that the species was breeding locally, and a search for larvae was commenced. After several hours of crawling around the scrub floor, five eggs and two larvae were found.

All five eggs hatched, and the seven larvae were fed on a cultivated species of Pseuderanthemum until about half-grown, when the supply ran out. In desperation, Sida was tried and they ate this with some reluctance. They all pupated however, though somewhat undersized.

Their numbers would never become very great in the area as they have to compete with Doleschallia bisaltide australis (The Australian Leafwing) for the host plant. D. bisaltide larvae develop at about four times the rate of H. alimena, and are more aggressive, often devouring smaller larvae present on the same plant.

† P.O. Box 175, North Tamborine, Qld., 4272.

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'Aerial' Species.

Some interesting collecting may await collectors, particularly in rain-forest areas, when more attention is focussed on the tree-tops. Many climbers and several epiphytes and parasitic plants are apparent only at this level, and could support as yet unrecorded species such as the Philiris species (Lepidopt.: Lycaenidae) lately discovered in New Guinea.

Life History of the Butterfly Toxidia andersoni (Kirby)
(LEPIDOPTERA: Hesperidae)

By D.F.Crosby ‡

For many years Anderson's Skipper has been placed in the genus Hesperilla Hewitson; however this was corrected by McCubbin (1971: 163) who noted that the late F.E.Wilson had bred the species on Wire-grass (Tetrarrhena juncea), and that the larva and pupa are of the Toxidia type, quite distinct from Hesperilla.

Subsequently Common & Waterhouse (1972: 104) commented similarly, but added a description of the larval head and pupal shell.

Shortly after Wilson's death, his widow offered the writer his sundry files, and amongst them were the following items:

(a) A short typed description of the occasion when females of H. andersoni were seen to oviposit, and a description of the egg.
(b) Two photographs of a larva, one of which had the word "andersoni" written on the reverse.
(c) A photograph of an egg which corresponded with the written description.
(d) A photograph of a Toxidia-type pupa.

These five items had been fastened together and were clearly part of an article which Wilson proposed to write. The typed descriptions read as follows:

"Life History of Hesperilla andersoni Kirby."

H. andersoni was flying commonly at Kallista, Victoria, on the morning of January 2nd, 1948. Two of the above species were seen to oviposit, and both were collected for identification after depositing the eggs. The eggs were placed on the underside of a dry Eucalypt leaf in one instance, and on a dry frond of Bracken Fern in the other. Both eggs were deposited on leaves suspended within three inches of the ground in a dense growth of 'wire grass', (T. distichophylla). (This identification appears to be incorrect, and should read T. juncea, the other species being restricted to sandy ground in light forest -- Ed.)

Description of Egg. (Fig. 1)

Dome-shaped, flattened at base and anterior end. An irregular light brown ring round middle, lightly flecked with brown spots within flattened area surrounding micropyle. Fifteen strong vertical ribs extending from base to edge of flattened area of anterior end."

The four photographs mentioned are reproduced on the following page. Fig. 1, Egg: Fig. 2 shows the larva in dorsal view: approximate length 15mm., and probably early in final instar. Fig. 3 shows the larva in a rough shelter made from an Eucalyptus leaf drawn together with silk strands, and Fig. 4 the pupa in lateral view.

Common and Waterhouse indicate that the butterfly collection of the National Museum of Victoria contains the larval head, pupal shell, and female insect bred by Wilson. These items were inspected and found to match the photographs.

The cast larval head is 3mm. wide, and of a deep brown colour. The pupal shell is a deep brown colour also, and is distinctive in that the wing-case areas have darker markings on them simulating the veins and termen of the forewing. The prothoracic spiracles are particularly pronounced. Overall length 17mm.

The label attached to the mounted pupal shell reads:

"TOXIDIA ANDERSONI
KALLISTA. V.
21. 11. 49.
FIRST BRED EX (P)"

The labels attached to the female adult read:

" KALLISTA. V.
21. 11. 49 B
B. GIVEN"
"FIRST KNOWN BRED
EXAMPLE."

During the early days of his collecting, the author was frequently in contact with Wilson, and on a number of occasions had been told of the success in breeding the species, and was shown the photographs. For many years Wilson had been a close friend of the late M.W.Mules, and the photographs were either taken by him or for him at the CSIRO. Wilson was not known to use a camera.

REFERENCES:

Common, I.F.B. & Waterhouse, D.F., 1972 "Butterflies of Australia" (Angus & Robertson, Sydney.)
McCubbin, Charles. 1971. "Australian Butterflies" (Thos. Nelson & Sons, Sydney.)

‡ D.F.Crosby, 7 Russell St., Toorak. V. 3142.

Notes on Breeding Victorian Butterflies.

By A.D.Bishop and W.N.B.Quick. ⊕

ABSTRACT

Techniques are discussed for obtaining eggs and rearing larvae of butterflies. Notes are included on a number of Victorian species of which the authors have had experience.

INTRODUCTION

The breeding of butterflies is an important aspect of their study neglected by most amateur collectors. Their neglect is often due to the mistaken belief that breeding insects is a difficult, complicated, and time-consuming process; but in fact many Victorian species can be bred very successfully with very little attention, and employing very simple techniques. The collector who can breed butterflies has new fields of study open to him. Of the many applications, the following are worthy of mention:

(i) Recording of Life-histories. There are still a number of Victorian species of which the egg, larva, pupa and host-plant are unknown. If a fertile female insect can be induced to lay eggs, then larvae and pupae can be obtained far more easily than by searching.

(ii) Breeding for experimental stock. Eggs, larvae, pupae or imagines may be required for experimental work, and breeding is the logical way to obtain the large numbers usually required. If uniformity is desired, this can usually be obtained by inbreeding.

(iii) Genetic experiments. If it is desired to determine the genetic behaviour of a character, it is necessary to breed the species involved with as low a mortality rate as is possible.

(iv) Breeding specimens for collections. Some quite rare, or apparently rare, species are surprisingly easily bred, and this is a much more satisfactory way of obtaining specimens than collecting in the field; in addition, natural populations are not unduly depleted. Natural phenomena associated with population control and apparent rarity are not infrequently disclosed. It should be remembered, however, that the specimens so obtained do not represent a random sample of a natural population.

BASIC TECHNIQUES

Many well-known books contain good sections on breeding techniques; Common and Waterhouse (1972) is recommended to those who have not read it. It is not the intention of these notes to duplicate what has already been published in such books. Rather, a few basic techniques and pieces of equipment (some not widely employed) will be suggested here, and referred to in the section on individual species.

Fig. 1

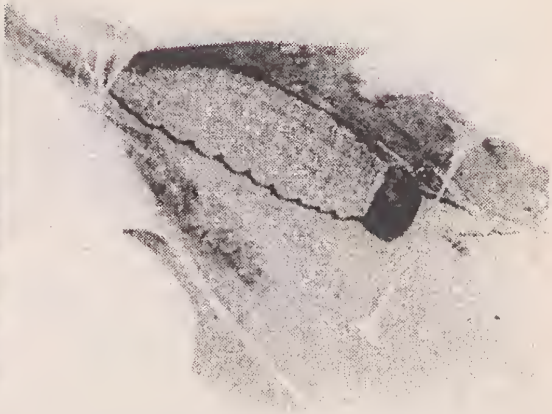


Fig. 3

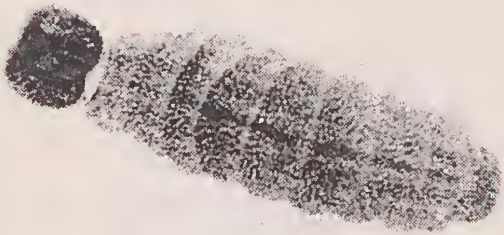


Fig. 2

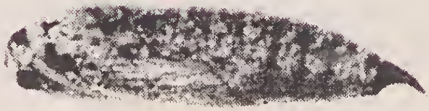


Fig. 4

Life History of the Butterfly Toxidia andersoni (Kirby)

1. Obtaining Eggs.

Most species will fail to oviposit without coming into contact with the foodplant or a related plant; the usual method of inducing oviposition is to confine the female insect over such a plant. If the foodplant is unknown, it may be profitable to try that of a related species. It should be noted that many butterflies, when captive, will lay eggs on plants other than their natural host species; thus many satyrids will oviposit on almost any species of grass. Most species will lay eggs only after feeding, and some only in direct sunlight.

(a) Intensive contact technique. A fertile female butterfly is placed in such a situation that it must intermittently come into physical contact with the foodplant. This method often produces better results than creating a painstakingly "natural" situation.

Small foodplants are grown in a 6-inch pot, and a frame formed from two wire hoops (coat-hanger wire is sufficiently strong) soldered or otherwise secured at right angles to each other, is inserted in the pot. A section of stocking, closed or knotted at the upper end, is then fitted over the frame and rim of the pot, and the butterfly introduced from the side. Alternatively, pot and frame may be dropped into an entire stocking from the open end, the butterfly introduced, and the top closed by an elastic band. Watering is done directly through the mesh of the stocking.

Larger foodplants may be grown in cans or garden beds, and the female butterfly introduced into a sleeve over a branch of the plant. If it is desirable to exclude ants from such an enclosure, the stem below the sleeve, and any stems having foliage touching the sleeve, should be liberally ringed with vaseline or grease.

(b) Horizontal Enclosure. This is necessary only for the few species which oviposit in flight, (Oreixenica orichora is an example), but might well be tried if little or no success is obtained by method (a). Construction is identical with that described above, but the wire hoops should be longer, say, three times the diameter of the pot, and the set-up laid on its side except for watering. Small species will have room to flutter if not fly freely, but may need to be stirred from time to time. The introduction of several butterflies into the one enclosure will assist greatly in this regard if segregation of the eggs is not required.

(c) "Natural" Situation. This method should be necessary only if (a) and (b) fail. A large enclosure, similar to an aviary is provided with flowering plants in addition to the food-plant. The provision of correct flora may prove to be of the utmost importance, and is currently being researched overseas. Myrtaceae and Compositae appear to be most patronised by the satyrids, and the latter by the Hesperidae.

Feeding of butterflies in the smaller enclosures can be accomplished with a small brush, placing a drop of sweetened water near where they are at rest. Touching the tarsi of the second or third pairs of legs will enable the insect to sense its presence, and the proboscis is almost instantly extended. Early morning 'misting' of the smaller enclosures, simulating dew, is essential, for it is at this time of day during which the insect's moisture losses are replaced.

2. Rearing Larvae.

The simplest method is to leave the eggs on the foodplant, taking care to keep the environment sufficiently humid to prevent desiccation. This is especially important with forest species, and may necessitate using a perforated or punched polythene bag over the smaller enclosures, and careful attention to shading from direct sunlight. The wire frame and stocking should be retained to prevent straying and provide protection from parasites. Great care should be taken to prevent access by ants, at least until the eggs have hatched. Pots can be stood in a shallow vessel of water for this purpose. Apart from watering of the foodplant, very little attention is needed. Although the greatest danger to most species is from desiccation, if the soil and plant are too wet, larvae, particularly when pre-pupal, may succumb to fungal infection. Danger from this source can be reduced by over-shading the enclosure rather than exposing it to too much sunlight, and by allowing freely-circulating air to reach the enclosure at all times.

If minimum mortality rate is essential, the above method may be unsatisfactory. In this case larvae should be kept in a clean, cool plastic box or polythene bag, and pieces of foodplant supplied as required. Rinsing the foliage of the foodplant in very weak potassium permanganate solution, and drying with a sterile towel may be desirable in extreme cases. Provided that the container is kept scrupulously clean, and appropriate shelter supplied for larvae which require it, this method is very successful for most species, but requires considerable attention.

It should be noted that larvae of many Lycaenidae are normally attended by ants, and may not survive in captivity without ants being in attendance. Ants will live for a considerable period if fed with a mixture of flour and honey, together with occasional pieces of apple. Stale food should be removed regularly. Additionally, some larvae are cannibalistic, and may need to be housed separately. Most will pupate more successfully if provided at maturity with small fragments of dry bark or other shelter.

3. Care of Pupae.

Pupae may be left on or near the foodplant, or kept in suitable containers, which should have sides rough enough for a newly-emerged butterfly to ascend without risk of falling. Although perhaps not as sensitive as eggs or young larvae, most

pupae need protection from desiccation; this can be achieved by placing the pupae on a layer of dry cotton wool laid on slightly damp sand. The container or breeding box must not be airtight however, and it may be necessary to carefully re-dampen the sand at intervals.

Notes on Some Victorian Species.

Family HESPERIIDAE
Larvae of Hesperilla and Oreisplanus spp., feeding on Gahnia, should be sleeved out on the foodplant (preferably container-grown) as the leaves dry out and curl rapidly when cut, crushing larvae in their shelters. Larvae of H. picta, H. chaostola, H. chrysotricha and perhaps H. crypsargyra have been found very sensitive to desiccation, and under some conditions may not survive on G. radula or even G. sieberana unless specially humid conditions are created, as described earlier for rearing forest species of Satyridae. Alternatively, a sleeved plant on which larvae are feeding may be lightly sprayed with water during very dry weather. If the sleeve is still wet at night however, the larvae may not feed. Paradoxically, although so liable to desiccation, larvae of these and other Hesperilla species, even in the final instar, may if necessary be transferred to any available species of Gahnia without apparent ill-effect. For most species G. sieberana appears to be a better foodplant than G. radula. Butterflies of the family Hesperiidae may not lay eggs as readily as those of the nymphalid sub-family Satyrinae.

Family P[illegible]NIDAE
Represented in Victoria by few 'permanent residents', little experience has been obtained in means of persuading these relatively large, active insects to oviposit. Still, warm but not necessarily very sunny contitions appear to be desirable, and it is suggested that attention be paid to the provision of very evenly-lit enclosures (i.e. without a preponderance of reflected or direct light from any one side) for these butterflies.

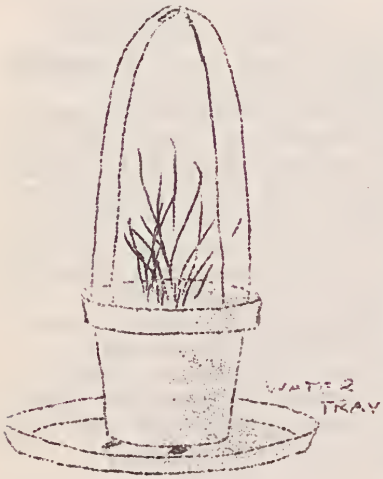
Family PIERIDAE
Again, this family also is represented by few native species, although the persistence of the one introduced species in gaining access to enclosures over Brassica crops suggests that they will readily oviposit [illegible] confined.

Family NYMPHALIDAE
Sub-family DANAINAE
Provision of a substantial 'natural' environment is apparently essential with the Danaids. Their habit is to perform a circling flight of the food-plant between depositing successive eggs, and although most collectors have had the 'wanderer', Danaus plexippus, oviposit on garden-grown Asclepias, few appear to have

experimented with captive parent insects. Certainly, once larvae are obtained, they are easily raised on a growing food-plant, but appear to find cut stems unacceptable.

Sub-family SATYRINAE

Butterflies of this group are probably the easiest to breed. Most oviposit readily and the larvae of grass-feeding species accept common grasses.



WIRE-FRAME SETUP SUGGESTED FOR METHODS (a) & (b).

Heteronympha merope. 'Common Brown' The intensive contact method (a) has been used to obtain eggs in the case of all other species of this genus listed below. Eggs of H. merope are (under confinement at least) in groups of up to a dozen attached to grass leaves. Eggs of H. penelope, the 'Shouldered Brown', are laid fairly readily in warm sunny conditions in the presence of common grasses, and are relatively large and non-adhesive. H. solandri (Solander's Brown) oviposits readily on common grasses. Eggs are small, green and adhesive, and appear prone to desiccation. Eggs of H. paradelpha (Spotted or Scarce Brown) lays eggs very readily, even in the confines of a triangular envelope, but are extremely prone to desiccation. They are non-adhesive and very small. Oreixenica correae, the Correa Brown, similarly oviposits freely while at rest. The eggs are green, 0.7mm in diameter, and resinously adhesive, sticking to any object or grass they may contact in falling. Reared at low altitudes, larvae still enter a diapause during May, lasting until September, when they recommence feeding, the butterflies emerging much earlier than in their natural environment. A second brood, raised experimentally from this early emergence, entered a false diapause and suffered severely from desiccation, the few survivors being diminutive. Eggs of O. orichora are similar in size. but non-adhesive and deposited while in flight. They dehydrate rapidly unless removed to a cool, humid enclosure, although the butterfly itself will only fly while the sun is shining brightly. Method (b) was used with some success, and as with O. correae larvae enter a diapause. A second brood did not survive the heat of summer, but conceivably could have, had more humid conditions been provided. Kershaw's Brown, Oreixenica kershawi, deposits eggs sparingly on common grasses. These are similar to the eggs of H. solandri. Both eggs and larvae are extremely susceptible to desiccation. Argynnina cyrila (Cyril's Brown): eggs are laid

very readily on common grasses if method (a) is applied. Larvae have a very low mortality rate if humidity is not too low at the time of pupation; hence this species appears to be very promising for experimental work, although Heteronympha merope may be more readily available.

Sub-family NYMPHALINAE
Precis villida (Meadow Argus). Eggs appear to be fairly readily deposited on Plantago spp., but much less readily on Erythraea australis. They hatch in seven days in autumn, larvae feeding and developing rapidly. It has been observed that under natural conditions, this and other species frequently oviposit on nearby objects rather than directly on the foodplant.

Family LYCAENIDAE
By method (a) larvae of Lampides boeticus (Pea- or Lupin Blue) and Zizina otis labradus (Clover Blue) have been reared in considerable numbers. Cut flowers of Russell Lupin were used for the former in lieu of a growing plant. Candalides heathi (Rayed Blue) oviposited readily on flowers and foliage of cut Parahebe, and larvae reared without loss in small polythene bags. Warm, humid conditions were provided for the parent insect in each instance. Larvae of Lampides boeticus were reared in individual containers to avaid losses due to cannibalism. Mould may be a problem when rearing larvae normally attended by numerous ants. The problem may be partially overcome but scrupulous attention to cleanliness of containers. Washing the mid-dorsal gland of valuable larvae may be a worthwhile experiment, and could be easily accomplished with a small camel-hair brush.

REFERENCES

Common, I.F.B., and Waterhouse, D.F. (1972) "Butterflies of Australia" Pp. 444-7 (Angus & Robertson.)

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Excursion to Brisbane Ranges.

On Sunday 4 March an excursion to the Brisbane Ranges was attended by thirteen members and friends. The meeting place was Anakie, and some time was spent collecting near here through the morning. The next stopping place was Steiglitz for lunch. The afternoon was spent at two spots along the road to Bacchus Marsh, still in the Brisbane Ranges. At the last stopping place the butterfly Heteronympha penelope (Shouldered Brown) was found in reasonable numbers as had been hoped, for this locality is of interest in being intermediate between the distribution areas of two races (sterope and alope) of this species. Another highlight for the lepidopterists was the sighting in this same area of what was almost certainly a Chequered Swallowtail, Papilio demoleus sthenelus, a rare visitor to southern Victoria.

Insects collected or seen

DIPTERA:
Family BOMBYLIIDAE: Compostia vittata
" ORTALIDAE: 1 sp. on Xanthorrhoea
HYMENOPTERA:
Family FORMICIDAE: Myrmecia gulosa and other Myrmecia spp.
Camponotus sp.
Iridomyrmex purpureus
Family SPHECIDAE: 1 sp.
" POMPILIDAE: 1 sp.
" BRACONIDAE: 1 sp.
ORTHOPTERA:
Family ACRIDIDAE: 1 sp., m. & f.
ODONATA:
Family GOMPHIDAE: 1 sp.
LEPIDOPTERA:

Family	Species	Notes
HESPERIIDAE	Dispar compacta (Dispar Skipper)	Several taken
PAPILIONIDAE	Papilio demoleus (Chequered Swallowtail)	One specimen, apparently this species, seen.
PIERIDAE	Delias aganippe (Wood White)	Several taken, seen.
NYMPHALIDAE	Heteronympha merope (Common Brown)	Females not uncommon.
	Heteronympha penelope (Shouldered Brown)	Moderately plentiful in one area with H. merope.
LYCAENIDAE	Ogyris olane (Olane Azure)	1 or 2 flying. 1 larva, 2 pupae found on trees bearing Amyema miquelii.
	Lucia limbaria (Small Copper)	1 specimen, probably this species, seen.

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Mt. Baw Baw

March 4, 1973

While others were investigating the Brisbane Ranges, Nigel Quick made a rather hurried trip to the Baw Baw plateau, where, in ones and twos over the past several seasons, a small butterfly apparently identical with Neolucia mathewi, rather unimaginatively called Mathew's Blue, has been taken flying with N. hobartensis, the Mountain Blue.

Neolucia mathewi is characteristically a near-coastal insect, and its appearance at almost 5000' (1700m) is intrigueing. The foodplant of the alpine insect is Monotoca scoparia, and that of the coastal population Monotoca elliptica. Prior to the present season, only two or three plants, in each case growing on or near granite boulders, had been found, and were

obviously insufficient to support even a small population under rigorous alpine conditions. The purpose of the visit was to obtain further specimens for dissection, and to locate, if possible, the more substantial occurrence of Monotoca which was presumed to exist on the mountain. Additionally it was hoped to obtain specimens of Oreisplanus muniongs, the Alpine Skipper, and Oreixenica correae (Correa Brown) for breeding stock.

Unfortunately, it was found that seasonal variation had dictated otherwise, and emergence of the alpine insects must have been the better part of one month earlier than usual. Few butterflies of any species were in evidence -- half a dozen or so O. correae only were collected, 3 Neolucia hobartensis, and just one N. mathewi (?), all very worn. Normally, O. correae would be present in countless hundreds, with a good sprinkling of Heteronympha solandri amongst the snow-gums.

The Epacris bogs, around which the Monotoca had initially been located, were followed to the summit without finding any additional plants. After descending into the glen on the north side of the summit, in futile search of the Carex swamps for the Alpine Skipper, further endeavours were made to locate the Monotoca. In one area granite boulders were seen to be rather numerous, and a search here was more fruitful. Quite a number of plants were found, characteristically right beside or even growing over, the boulders. Unfortunately no further specimens of the little butterfly itself were seen, and the area will have to be re-visited next season.

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A Note from the North.

In a note to Charles McCubbin, a young correspondent, Sue Walter of "Karinya Park", Pittsworth, Q., states: "Today I caught a specimen of Phaedyma shepherdi latifasciata (a female). When I catch another I will send it to you for positive identification. As they are a long way south of their normal range, we are wondering if our unusually hot and humid summer has any bearing on their appearance."

No mention is made of a search for possible food-plants, but this might be well worthwhile in view of the apparent presence of more than a single insect.

The letter was accompanied by an annotated list of the butterflies which have been collected by her in the area. The list will be reproduced in the next Journal.

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Authors' Illustrations

The illustrations accompanying Mr. Crosby's article proved a severe test for our 'graphic arts department', but, although contrast variations are extreme in the originals, these important prints were finally reproduced with reasonable success. Illustrations for future articles should be submitted as well-exposed 35mm. negatives. Author's cost is $5.00, and may be shared.

Barbecue. Saturday, May 26.

Weather permitting, it is hoped this will be an enjoyable outing for members and friends alike. It is not a highly-organised affair, and it is requested that you b-y-o everything (including water) except firewood, which abounds.

The barbecue site, on the property of one of our members, consists of Red Stringybark forest along the ridge, falling to a fern gully some 300' below. This 20-acre area, and those adjoining, are still largely in primitive condition, and back on to the environs of the Kinglake West National Park. Altitude is approx. 1500' (500m).

Members -- and friends -- are invited to meet on the property from noon onwards, perhaps for a picnic lunch, collect if they will through the afternoon, and then join the others for an early barbecue at sundown. Some interesting night-light collecting may await those who wish to stay on later into the evening, and there are no close neighbours to be disturbed by those will-o'-the-wisp lights.

Distance is only 37miles (approx.) from the GPO., and a map showing approaches, with directions, is being included as a lift-out supplementary sheet in this Journal. Admission is by donation of 50c per person, payable at the barbecue. Proceeds to the Society without deduction.

Few hazards exist for youngsters, but it must be impressed upon them not to wander away, as the bush is dense in places, and the terrain steep. No ferns or other plants may be removed or destroyed in this conservation area.

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Death of Norman McCance.

The death of Norman McCance on January 7th. last brought to a close the career of one of our most colourful writers on Natural History of recent times.

Although his interests lay mainly in aviculture, fish- and reptile-keeping, his long association with the Nature Notes page in the "Weekly Times" brought him closely into touch with the field of entomology. Here he answered the many queries forwarded by country folk regarding insect life, frequently referring to Arturs Neboiss and Elizabeth Matheson when in doubt.

The epitaph "He wove some thread of magic into all his stories" which appeared as an addendum to the death notice in the "Age", sums up the delightful prose of his writings. He had the rare gift of bringing the most prosaic subject to life with a sparkling humour.

Older members will remember perhaps his wrestling broadcasts, while others may recall his morning news sessions with the many voices of the birds in his aviaries as a background. Sharing a room with him in the early days of broadcasting at the A.B.C. was indeed an experience. Those of our members who have had the pleasure of opening parcels of insects from overseas will appreciate the excitement there was when his parcels, with such interesting contents as live newts and frogs, arrived.

Although we have his enthusiastic writings on many subjects, we will remember him for the way he has promoted an interest in entomology in so many of both young and older members of the community.

J.C.Le S.

An Unusual Dart-tail.

While collecting seed of Eucalyptus viminalis var. racemosa (Coastal variety of the Manna Gum) near Dingley, (V.) recently, several elongate, turbinate galls were noticed on young twigs of one tree. Two of these had already hatched (if that is the correct term), while a third remained intact, and was placed in a small polythene bag to prevent drying out.

Several days later it was noticed that an insect had commenced emerging, and was busily enlarging a hole through one side from the interior. Some two hours later the insect was observed actually emerging, wings fully expanded and dry.

This proved to be one of the Cleonymidae (HYMENOPTERA) belonging to the genus Dinoura (although a more valid if less descriptive name may have recently been applied).

Insects of the genus are characterised by the expansion of the ovipositor into an extraordinary three-flanged structure for all the world like the feather of an arrow or dart. This species was a rather striking insect, being shining chestnut brown and irridescent blue, with whitish legs, and for a gall-wasp rather large -- 12mm. in length. It flight is rather weak and laboured.

Encouraged by this most obligingly rapid emergence of such an intrigueing little insect, galls of other types were collected and similarly treated, with the most gratifying results. It appears that the slight but relatively rapid drying even within a polythene bag may trigger emergence of these little insects. As so little equipment is necessary for their collection, and so few details of their early stages are yet understood, this and related families may offer a challenge to some of our members.

W.N.B.Q.

SERVICE TO MEMBERS

WANTED:

A COPY of R.J.Tillyard's "The Biology of Dragonflies", (Cambridge University Press, 1917). J.F. Hutchinson, Scoresby Horticultural Research Station, P.O. Box 174, Ferntree Gully. V. 3156. Phone 231-2233. (A.H. 878-2770).

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VOLUNTEER TYPIST to prepare stencils for the June edition of The 'Victorian Entomologist'. Please contact the editor.

Rate: 5c per line, available to Financial Members only. Copy must be in the Editor's hands not later than the 20th. of the month prior to publication. Full rates and conditions are detailed in Vol.3: No.1.

Vol. 3: No. 3. June, 1973.

NATIONAL MUSEUM
19 JUN 1973
OF VICTORIA

THE VICTORIAN ENTOMOLOGIST

Journal of
The ENTOMOLOGICAL
SOCIETY of VICTORIA

Regd. at G.P.O. Melb. for transmission by post
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The ENTOMOLOGICAL SOCIETY of VICTORIA

Membership

Any person with an interest in entomology shall be eligible for Ordinary Membership. Members of the Society include professional, amateur, and student entomologists, all of whom receive the Society's bi-monthly journal, the "Victorian Entomologist". Excursions are arranged to areas of topical interest at intervals, mainly during the warmer months. Lectures by guest speakers or members are a feature of most meetings, at which there is also ample opportunity for informal discussion between members with like interests.

Objectives

The aims of the Society are:

(a) to stimulate the scientific study and discussion of all aspects of entomology,

(b) to gather, record, and disseminate knowledge of all Australian insect species,

(c) to compile a comprehensive list of all known Victorian insect species, and

(d) to bring together in a congenial and scientific atmosphere all persons interested in entomology.

Meetings

The Society's meetings for 1973 will be held at Clunies Ross House, National Science Centre, 191 Royal Pde., Parkville, at 8 p.m. sharp, on the second last Friday of even months, commencing with the Annual General Meeting in February. Visitors are always welcome.

Annual Subscriptions:	$
Ordinary Member	3.00
Country Member	2.00
Associate Member	1.00
Junior or Student	1.50

(Associate members do not receive the journal.)

Notwithstanding the rates shown herein, rising costs and rates of postage, &c. may at some stage necessitate an increase in annual subscriptions

The statements and opinions expressed in articles herein are the responsibility of the respective authors, and do not necessarily indicate the policy of the Society.

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19 JUN 1973
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The statements and opinions expressed in this Journal are those of the authors concerned, and do not necessarily reflect the opinions or policies of the Society.

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Diary of Coming Events

June 22nd, 1973. General meeting. Mr H.B.Wilson, Senior Entomologist, Plant Res. Inst., on "Insect Telergones and Pheromones".

July excursion. Date to be fixed at June meeting. Phillip Is. One aim will be to locate over-wintering area of Wanderer butterfly (*Danaus plexippus*)

Subsequent general meetings: Aug. 24th, Oct. 19th, Dec. 14th.

COUNCIL MEETINGS

7.30 p.m. July 13, Sept. 14, Nov. 9, at Clunies-Ross House

EXCURSIONS

July: See above.
Mid-October: Inglewood (Whipstick Scrub).
November: (Cup Weekend). Big Desert.
Late November: Mt. Macedon.
Christmas-New Year: Suggan-Buggan.
Late January, 1974: Extended trip to East Gippsland sub-tropical rain-forest and Cape Everard.
Mid-February, 1974: Inglewood (Whipstick Scrub).

Reports and Notices

GENERAL MEETING: Friday, April 27th, 1973, at Clunies-Ross House.

The President, Mr C.W.McCubbin, chaired the meeting, which was attended by 38 members and friends. A special welcome was extended to the Catherne family and Mr P.Carwardine. Apologies were received from Messrs A.Morton, N.Quick, J.C.Le Souëf, and O.Rogge, and from Misses E.Matherson and H.Malcolm.

Correspondence was received from:

1. Mr A.J.Frazer, requesting Volume 1 of the Victorian Entomologist and continuations.
2. United Melbourne Freeway Action Group, requesting our attendance and support at their functions , etc.
3. The Save Westerfold Committee enclosing a petition and pertinent information on planned freeways.
4. Circular of the Entomological Society of Australia (N.S.W.), March, 1973, No. 231.
5. Circular of the Entomological Society of Australia (N.S.W.), April 1973, No. 232.
6. Copies (forwarded by the Librarian, Mr J.F.Hutchinson) of a detailed list of early papers on moth taxonomy presented to the library by Mr R.Condron. Tabled.
7. Auditor's Report of Statement of Receipts.
8. TIEG Newsletter Vol. 7, Nos 2&3.
10. Entomological Society of Queensland News Bulletin No. 93, Feb., 1973
11. Entomological Soc. of Qld, News Bull. No. 94, March, 1973.

Exhibits

G.Clark: Butterflies and other insects from the Sorrento area, including an adult of the butterfly Polyura pyrrhus sempronius (Tailed Emperor) taken at Rosebud.

C.McCubbin: Butterflies and bees collected during a visit to England in 1972.

S.McEvey: A pair of the butterfly Danaus chrysippus petilia (Lesser Wanderer) and a probable specimen of the skipper Ocybadistes walkeri sothis (Yellow-banded Dart) collected at Rutherglen on 23rd March, 1973.

Speaker

The speaker was Dr G.Ettershank, the topic being "Ants and General Entomology of New Mexico". In a talk illustrated with slides, Dr Ettershank first discussed the land forms and general geography of New Mexico and then talked about the arthropod fauna, including Harvester Ants, Sun Spiders, Whip Scorpions and scorpions, and the flora.

General Business

1. The Treasurer reported a financial standing of $83.40, and a total of 60 financial members.
2. Mr F. Hallgarten moved that the Auditor's Report, which was tabled, be published in the June issue of the Victorian Entomologist. The motion was carried.
3. As formal notice is required for meetings about constitutional changes, notice was formally given that the June general meeting shall be preceded by an Extraordinary General Meeting at 7.30 p.m. on the same evening (June 22nd, 1973).
4. Mr A. Bishop moved that advertisements in the journal, the Victorian Entomologist, be accepted from bona fide commercial breeders only (in respect of advertisements of insects for sale). This motion was seconded by Mr R. Condron.

COUNCIL MEETING May 11th, 1973

1. It was proposed to postpone the excursion to Phillip Island until July to enable arrangements to be made at the June general meeting.
2. As a means of raising money and broadening the Society's publicity, it was suggested by Mr C.McCubbin that a few members might make some Christmas cards with a set of copies he has of a painting of the Imperial White (Delias harpalyce). With a card backing and a printed greeting etc it is hoped that they could be sold to members and friends. It was proposed that a motion be put to the next general meeting .
3. As general meetings are now held at Clunies-Ross House it is hoped that films from CSIRO and other organisations can be shown. Various films were discussed as possibilities for future meetings.

PUBLICATIONS COMMITTEE MEETING May 18th, 1973

The matter of exchange and free copies of the Victorian Entomologist was discussed. It was decided that the journal should be sent free to national and state libraries and state museums requesting subscriptions .

AUDITOR'S REPORT

To the Members of the Society

I have examined the statement of receipts and payments for the year ending 31st December 1972 and have obtained all the information that I have required.

In my opinion the statement summarises fairly the financial transactions of the Society.

J.L. Collyer A.A.S.A.

Notes on Moths and Butterflies in the Rutherglen District from 1967

by S.F.McEvey*

Rutherglen is situated in the north-east of Victoria, bordering the Murray River about 43 km west of Wodonga (see maps). A broad outline of its ecology, including vegetation and climate, can be found in McEvey, A.R. (1965).

Three major habitats can be found in the district. They are dry sclerophyll forest, swamp woodland, and a mixture of grassland, savannah and woodland. In addition to this natural vegetation, other habitats include introduced trees and shrubs in the local park and orchards and gardens in the township.

The district in which most observations were made falls within the 20"-25" rainfall region. Rutherglen's wet season is from March to October; thus the winters are cold and wet and the summers hot and dry.

The notes forming the basis of this article are from observations made on occasional visits to the district since 1967, and therefore give only a limited picture of the Lepidoptera found there.

* 5 Gissing Street, Blackburn South, Victoria, 3130

List of Butterflies and Moths Taken or Observed

Family	Species	Notes
PAPILIONIDAE	Papilio anactus (Dingy Swallowtail)	Common. In the township area there are many unsprayed citrus trees suitable for breeding. On one orange tree about 2 m high 33 larvae and eggs were found.
	Papilio aegeus aegeus (Orchard Butterfly)	10 adults were seen on 13 and 14 February, 1971. In 1972 a female was caught.
	Papilio demoleus sthenelus (Chequered Swallowtail)	A single specimen was seen on 2 November, 1968.
NYMPHALIDAE	Vanessa itea (Australian Admiral)	Common.
	V. kershawi (Australian Painted Lady)	Very common. Cape Weed (Cryptostemma) is also very common but I have not noticed this species breeding in Rutherglen.
	Precis villida calybe (Meadow Argus)	Very common. I found a larva during its pre-pupal stage, of this species, close to a clump of Plantago in March 1973.
	Danaus chrysippus petilia (Lesser Wanderer)	I have seen this species at Rutherglen during May 1968 and in March 1973. At both times only a few were seen.
	D. plexippus (Wanderer)	In March 1967 the Wanderer was very common at Albury (N.S.W.), but at the same time none were seen at Rutherglen. On 28 Feb. 1970 several specimens were taken at Rutherglen.
	Heteronympha merope merope (Common Brown)	Fairly common.
	Acraea andromacha andromacha (Glasswing)	Six Glasswings were seen on 13 Feb. 1972. See McEvey, S.F. (1971)
PIERIDAE	Delias aganippe (Wood White)	Common. Often I have seen this species flying around the tops of Currajong (Brachychiton) trees.

List of Butterflies and Moths Taken or Observed, contd.

Family	Species	Notes
PIERIDAE	Delias harpalyce (Imperial White)	One specimen observed at Rutherglen on 1 March 1970.
	Anaphaeis java teutonia (Caper White)	Sometimes extremely common.
	Pieris rapae (Cabbage White)	Very common.
LYCAENIDAE	Lampides boeticus (Pea Blue)	Common on flowering Buddleia
	Nacaduba biocellata biocellata (Double-spotted Lineblue)	Fairly common.
HESPERIIDAE	Ocybadistes walkeri sothis (?) (Yellow-banded Dart)	Two specimens collected on a Lavender bush, on 25 March 1973.
AGARISTIDAE	Cruria donovani	Not common. I have found this species more commonly in the Chiltern Hills, 13 km east of Rutherglen.
	Conocrus behri (Day Moth)	Fairly common.
	Phalaenoides glycine (Vine Moth)	Very common.
SATURNIIDAE	Antheraea eucalypti (Gum Emperor Moth)	Common.
ARCTIIDAE	Nyctemera amica	Fairly common.
	Utetheisa sp. (Fairy Moth)	Very common on the Lake Moodemere "flats" (Red Gum swamp woodland)
NOCTUIDAE	Dasypodia selenophora (Old Lady Moth)	Occasional specimens seen
GEOMETRIDAE	Chlorocoma sp. (Emerald)	Common.

REFERENCES

McEvey, A.R. (1965) "The Birds of the Rutherglen District". Emu 65(1), 1-56.

McEvey, S.F. (1971) "Interesting Records for Victoria". Victorian Entomologist 2(3), p.8.

Excursion to the Brisbane Ranges II (Dragonflies)

This is a supplementary list to that which appeared in Vol.3 No.2 of the Victorian Entomologist. It lists some Odonata taken and notes on the species.

ZYGOPTERA

LESTIDAE: SYMPECMATINAE

Austrolestes annulosus (Selys)
Austrolestes is the only Australian genus of the family. A. annulosus is a dark insect generally, black to bronze marked with pale blue. It has a wingspan of about 35 mm and an overall length of 40 mm. It is widely distributed over the southern part of the continent, excepting South Australia, and locally common. Larvae are able to tolerate temporary water or permanent still water. Adults lay eggs on weeds and are on the wing from November to April.

ANISOPTERA

AESHNIDAE: ANACTINAE

Hemianax papuensis (Burmeister)
A robust insect with a light brown thorax and a striped black and yellow abdomen, a wingspan of about 100 mm and an overall length of 70 mm. It is found over Australia generally and New Zealand. Eggs are laid on weeds in still water or slow rivers. Adults are on the wing from July to April.

CORDULIIDAE: CORDULIINAE

Hemicordula tau Selys
Has two stripes on the thorax, a black stripe along the dorsal surface of the abdomen and around the abdominal segments; otherwise it is yellow. Larvae of this species are able to tolerate a large variety of water types; thus it is a widely distributed species. Adults lay eggs on leaf litter and in weeds and are on the wing from October to April. The wingspan is 70 mm and the overall length is 50 mm. This species sometimes migrates in swarms.

LIBELLULIDAE: SYMPETRINAE

Diplacodes bipunctata (Brauer) and D. haematodes
Both species have a sandy yellow thorax, and a yellow and black abdomen, plus a small area of diffuse yellow on the base of the hindwing in the male. The species are separated from each other on wing venation and the shape of the abdomen.

They are widespread and common species found throughout Australia and beyond(East Indonesia, New Guinea and New Zealand). Larvae are able to tolerate a wide range of water types. Adults lay eggs on weeds and in litter and are on the wing from September to April.

Both have a wingspan of about 45 mm and an overall length of 35 mm.

REFERENCES

Fraser, F.C. (1960) A Handbook of the Dragonflies of Australia (Royal Zoological Society of N.S.W.: Sydney)

Watson, J.A.L. (1962) The Dragonflies (Odonata) of South-western Australia (Western Australian Naturalists' Club Handbook No. 7) (W.A. Nat. Club: Perth)

Watson, J.A.L. (1969) Taxonomy, Ecology and Zoogeography of Dragonflies (Odonata) from the North-west of Western Australia. Aust J. Zool. 17: 65-112.

J.F.Hutchinson

Miscellaneous Butterfly Records

Migratory Butterflies in Victoria

The following is an extract from a letter to Charles McCubbin from Mr M. Schwarz:

"on the 6.iv.73 I was surprised to see two specimens of Danaus chrysippus petilia in the Kyneton High School grounds at lunchtime.

On the same day Anaphaeis java teutonia was also present and was by far the most common butterfly around. I also noted two specimens of Eurema smilax during the same time.

All these butterflies were in reasonably good condition, and were, without exception, travelling due east; I had only half an hour to observe this during lunchtime. The weather became increasingly worse and during the following day it rained continuously."

The mention of large numbers of Anaphaeis java at Kyneton is of considerable interest, because this species, usually common in Melbourne in early summer, last season(1972-3) apparently did not reach Melbourne at all, at least in any numbers; this species was, however, locally common in the Grampians in early November 1972, and one or two specimens were collected in the Victorian Alps during the summer. By contrast, Eurema smilax appears to have been somewhat more common in Melbourne this autumn than usual.

Butterflies sighted in the Sunset Country, Easter 1973.

The following sightings were made by Charles McCubbin in the Sunset Country, 20 miles due north of Murrayville:

Anaphaeis java teutonia (Pieridae) common: males and females.
Danaus chrysippus petilia (Nymphalidae: Danainae) one female taken.
D. plexippus (Nymphalidae: Danainae) One seen.
Precis villida calybe (Nymphalidae: Nymphalinae) not uncommon.
Vanessa kershawi (Nymphalidae: Nymphalinae) not uncommon.
V. itea (Nymphalidae: Nymphalinae) not uncommon; no sign of food-plant found.
Zizina otis labradus (Lycaenidae:Lycaeninae) very common and widespread, especially near cleared country.

Butterfly Species from Pittsworth, Q.

By Sue Walter. †

Ocybadistes walkeri sothis	Taken fairly commonly throughout the year.
Papilio anactus	Mainly December. Larvae on Citrus in February.
Papilio aegeus aegeus	Larvae on Citrus in February. On Jan. 20 this year I saw a female lay an egg on Geijera parviflora (Wilga). The egg took five days to hatch. Young larvae are banded with brown and white, and have two rows of spines.
Papilio demoleus sthenelus	Appears from October.
Cressida cressida cressida	Appears during September.
Catopsilia pyranthe crokera	Found larvae on Cassia. Pupated three days later. On the fifth day as a pupa, they started to 'twitch'. Hatched after eight days.
Eurema hecabe phoebus	Taken throughout the year.
Eurema smilax	Fairly rare, taken during Sept., October, and November.
Delias aganippe	August to October. Rare.
Delias nigrina	Fairly common. Foodplant Loranthus (Amyema) gaudichaudii.
Delias nysa nysa	On January 20 this year I saw a number of this species, all males, on Heterodendrum oleaefolium which was intergrown by a small-flowered Wild Jasmine and Pandorea pandorana (Wonga vine). On P. pandorana I found a number of pupae. I also noticed that the plant had been eaten by something. I found no larvae, but I think it could have been eaten by the larvae of A.j. teutonia. Also on Capparis mitchelli.
Anaphaeis java teutonia	Taken from December. Larvae on Capparis mitchelli.
Cepora perimale scyllara	Common throughout the year, larvae feeding on Cabbage, Cauliflower and Brussels Sprouts.
Pieris rapae	Fairly common.
Elodina parthia	Throughout the year. Larva found on Asclepias fruticosa May 7, 1972 at Flagstone Creek, 19 miles from Toowoomba, Q.
Danaus plexippus	

Danaus chrysippus petilia	Found larvae on Asclepias fruticosa Jan. 20, 1973. Larvae are black with white stripes and two rows of yellow dots. There are a pair of fleshy processes on the second, sixth and twelfth segments. Pupae: green or fawn with a gold abdominal line underlined with black. The green ones have gold thoracic spots. Hatched after 7 days. All males.
Danaus hamata hamata	On the wing from January.
Euploea core corinna	Larvae feed on Nerium (Oleander).
Hypolimnas bolina nerina	
Vanessa kershawi	Fairly common.
Vanessa itea	Appears November. Fairly rare.
Precis villida calybe	Throughout the year.
Precis orithya albicincta	One specimen taken January 3, 1973.
Acraea andromacha	
Hypocysta pseudirius	Fairly rare. Appears December.
Ogyris amaryllis meridionalis	
Ogyris barnardi barnardi	During September.
Lucia limbaria	Two specimens. October.
Prosotas felderi	One specimen. January 24, 1973.
Lampides boeticus damoetes	One specimen. October.
Zizina otis labradus	One specimen. January 17, 1973

† The above notes were compiled by Sue Walter, "Karinya Park", Pittsworth, Q., and are additional to the record (Victorian Entomologist Vol. 3: No. 2, April, 1973, p.15.) for Phaedyma shepherdi latifasciata. The list is not intended to represent a comprehensive collection, and it is expected that additional names, particularly Lycaenids, will be added before long.

=== === === ===

Cleaning Stained Butterfly Specimens.

Stains on the wings of butterfly specimens, especially Lycaenidae (Blues) which have been relaxed for lengthy periods, are unsightly and often difficult to remove. The following has proved a reliable method of reducing or completely removing such stains on set specimens.

1. With a very soft camelhair brush, lightly but thoroughly swab stained area with clean water. Dry brush on a tissue, and use to remove surplus water. Repeat twice and allow to dry.
2. Immerse in clean chloroform for twenty minutes. Carefully remove, and allow to dry.
3. Swab any remaining stain with clean methanol. Immersion, if necessary, must not exceed two minutes. Dry gently & reset.

-- W.N.B. Quick.

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Also available - Seeds of host plants.

WRITE FOR CATALOGUE.

N O R T H W A R D B O U N D ?

Some recommended accomodation for entomologists -- and others heading north.

Country Club Motel....Dubbo, NSW.
Quiet, luxury accomodation. Intimate cocktail bar. Superbly prepared and presented meals in the relaxed atmosphere of a first-rate bistro. Childrens' menu. Hosts: Tony and Gay Gardiner. A Flag motel.

Motel Cardwell.... Cardwell, N.Qld.
Roughly 100 miles north of Townsville. Comfortable, quiet and well-ventilated units. Six-acre site offers family cabins and caravan park, spacious lawns, and pool. Superb views of Hinchinbrook Island from the clean, sandy beach. Licensed restaurant across street. Hosts: Jack and Nella Bocca. Phone 66-8636.

Bullock Bell Motor Inn....Kuranda, N. Qld.
Ideally situated on the forest edge. Birdwings and Ulysses float tantalisingly past, but hosts Howard and June Jones request no garden collecting. Low-tariff, family units available. Museum. Nature trail.

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Vol. 3: No. 4. August 1973.

NATIONAL MUSEUM
29 AUG 1973
OF VICTORIA

THE VICTORIAN ENTOMOLOGIST

Journal of
The ENTOMOLOGICAL
SOCIETY of VICTORIA

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The ENTOMOLOGICAL SOCIETY of VICTORIA

Membership

Any person with an interest in entomology shall be eligible for Ordinary Membership. Members of the Society include professional, amateur, and student entomologists, all of whom receive the Society's bi-monthly journal, the "Victorian Entomologist". Excursions are arranged to areas of topical interest at intervals, mainly during the warmer months. Lectures by guest speakers or members are a feature of most meetings, at which there is also ample opportunity for informal discussion between members with like interests.

Objectives

The aims of the Society are:

(a) to stimulate the scientific study and discussion of all aspects of entomology,

(b) to gather, record, and disseminate knowledge of all Australian insect species,

(c) to compile a comprehensive list of all known Victorian insect species, and

(d) to bring together in a congenial and scientific atmosphere all persons interested in entomology.

Meetings

The Society's meetings for 1973 will be held at Clunies Ross House, National Science Centre, 191 Royal Pde., Parkville, at 8 p.m. sharp, on the second last Friday of even months, commencing with the Annual General Meeting in February. Visitors are always welcome.

Annual Subscriptions:	$
Ordinary Member	3.00
Country Member	2.00
Associate Member	1.00
Junior or Student	1.50

(Associate members do not receive the journal.)

Notwithstanding the rates shown herein, rising costs and rates of postage, &c. may at some stage necessitate an increase in annual subscriptions

The statements and opinions expressed in articles herein are the responsibility of the respective authors, and do not necessarily indicate the policy of the Society.

NATIONAL MUSEUM
29 AUG 1973
OF VICTORIA

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(Ferntree Gully, V. 3156.
(Phone 231 2233

Diary of Coming Events

August 24th, 1973. General meeting, Clunies-Ross House.

Subsequent General meetings: October 19th and December 14th, 1973.

COUNCIL MEETINGS.

September 14th and November 9th, 7.30 p.m.

EXCURSIONS.

Mid-October: Inglewood (Whipstick Scrub).

November: (Cup weekend) Big Desert.

Late November: Mt. Macedon.

Christmas - New-Year: Suggan-Buggan.

Late January, 1974: Extended trip to East Gippsland sub-tropical rain forest and Cape Everard.

Mid-February, 1974: Inglewood (Whipstick Scrub).

REPORTS AND NOTICES

GENERAL MEETING: Friday, June 22nd, 1973, at Clunies-Ross house.

The Vice-President Mr. N. Quick chaired the meeting which was attended by 33 members and friends. A special welcome was extended to friends and new members. Apologies were received from Messrs. C. McCubbin, D. Crosby, O.Rogge, R. Pound, Mrs. J.C. LeSouef and Misses E. Matheson, H. White and L. White. Members were sorry to learn that Mrs. LeSouef's absence resulted from an accident causing a broken arm, and wished her a speedy recovery.

Correspondence was received from:

1. Mr. Jeffrey Bunn requesting information regarding membership.
2. The Secretary of the Australian Entomological Society, Dr. P.B. Carne, seeking concurrence with the Executive's decision to replace Dr. G.H.S. Hooper by appointing Dr. J. Nolan as Business Manager and the intention of the Executive to appoint Dr. R.L. Kitching as Treasurer following the resignation of Mr. R.T.G. Greaves.
3. The Australian Entomological Society enclosing formal notice of the 9th and 10th Council Meetings to be held in Western Australia on 11th and 12th August, 1973. An 'Appointment of Proxy' slip was also enclosed.

Exhibits:

Mr. G. McConnell: Butterflies collected in Northern Queensland, including specimens from Cairns, Bingil Bay and Townsville.

Mr. M. Schwärz: Bees and butterflies from England.

Speaker:

Mr. H.B. Wilson owing to a recent illness, was not able to give his talk to the Society on "Insect Telergones and Pheromones". However, it is hoped that he may still speak at a later meeting. He forwarded an apology to the members.

Mr. A. Neboiss, who very kindly prepared his talk at short notice, spoke in Mr. H.B. Wilson's place. His very interesting topic was "Caddis Flies". Mr. A. Neboiss covered the life cycle and collecting techniques for many species. His talk has certainly inspired us to give closer attention to these insects.

General Business:

1. The Treasurer reported a financial standing of $88.32, with a total of 72 financial members.
2. For the purpose of voting on amendments to the constitution, the first part of the meeting was declared an Extraordinary General Meeting. It was proposed at the March Council meeting that the following amendments and additions be made to the constitution.

   Section 5: Terminate first sentence by adding the words "with the approval of a General Meeting".

   Section 7(b): Amend the phrase "...and eight other councillors" to read "...and up to eight other councillors".

   Section 9: Under "The News Editor shall" add

   "(e)Be appointed by the Council and in turn the Publications Committee is to be co-opted by the Editor to the approval of the Society's Council.

   (f) Together with the Publications Committee shall accept responsibility for content, format and costing of the Journal, with the obligation to refer contraversial matters to General Meetings".

General Business (Cont'd.):

These amendments and additions were passed at the General Meeting and the Constitution is thereby modified accordingly.

3. In addition to the office bearers installed at the last Annual General Meeting another two councillors have been elected. At the Annual General Meeting Mr. Ray Manskie, proposed Mr. R. Condron, seconded Mr. J. Hutchinson, and Mr. A. Neboiss, proposed Mr. D. Holmes, seconded Mr. J.C. LeSouef, were nominated but not voted to the posts of councillors. To right this, Mr. R. Manskie and Mr. A. Neboiss were voted onto the Council at the June General meeting.

4. The motion moved by A. Bishop and seconded by R. Condron at the April General meeting, that advertisements in the journal, 'The Victorian Entomologist', be accepted from bona fide commercial breeders only, was put to the vote and carried at the Meeting.

COUNCIL MEETING, July 10th, 1973.

1. The retiring president of the Australian Entomological Society was appointed our proxy for their 9th and 10th Council Meetings.

2. It was suggested by the Council that on meeting nights when there is no speaker, it would be of interest to members to have a number of slides shown. Members are therefore invited to bring to such meetings up to six slides that would be of general interest.

3. Discussions on formulating a policy for dates for paying subscriptions and the issues of the journal covered by such payment. The subscriptions are due on January 1st of each year. Subscriptions received from new members during a year will entitle that member to receive "The Victorian Entomologist" for the whole of that year. An overdue subscription will be indicated by a red spot on the journal. Posting of the journal to overdue subscribers will cease with the issue for April, which will be marked as above.

4. Excursion co-ordinator. Following a suggestion by Mr. N. Quick, it was agreed that an Excursion co-ordinator be appointed for each month to act as a source of information on current field trips. Members planning excursions will be invited to advise the co-ordinator, who would then be able in turn to advise enquiring members what excursions are taking place on a particular date. Details will be finalized at the next General Meeting.

PUBLICATIONS COMMITTEE MEETING, July 20th, 1973.

1. It was discovered that the Queensland Entomological Society had not been receiving "The Victorian Entomologist" this year, and it was decided that this error should be rectified by sending all the 1973 issues.
2. The Editor reported on the decisions of the Council meeting affecting "The Victorian Entomologist" (see 'Council Meeting', item 3 above).
3. It was decided to communicate with "Banjora" of the "Weekly Times", following up the suggestion made by her of having part of 'The Victorian Entomologist" reserved for listing of juniors not in the Society, who wish to get in contact with others with similar interests.

EXCURSION TO PHILLIP ISLAND, 15TH JULY, 1973.

A midwinter's day in southern Victoriam must rank as one of the most unlikely occasions for an outing. Sometimes, just sometimes though, such excursions, because of their lack of precedent perhaps, prove not only enjoyable but profitable. The July excursion to the south-western corner of Philip Island was just such an occasion.

From sunrise the day was mild, and between 10 and 10.30 a.m. some 18 members and friends assembled at the Tooradin rendezvous. Swan Lake, in the Summerlands area of the island, was our destination, where Asclepias rotundifolia (one of the introduced "Cotton-bushes") was reported to have naturalised. Here we intended to check the plants for possible evidence of a permanent southern colony of Danaus plexippus - the Wanderer butterfly.

The area, at which we arrived soon after midday, is essentially one of coastal sand dunes and shallow, reedy, estuarine inlets. Substantial grass cover on the dunes remains, indicating a more or less stable dune formation, and numerous sheltered hollows and dips provide protection from the worst winds Bass Strait can produce.

Behind the primary dunes, extensive grazing has given rise to considerable weed invasion, and infestation by garden escapees. Amongst the latter, Asclepias rotundifolia doubtless originated. Its wind-borne seeds would quickly colonise suitable sections of the broken soil of the mutton-bird rookeries.

Access to the dunes, a matter of perhaps only a few hundred metres distant, incorporated a number of unexpected hazards. Doubtless approach from the beach would have been more reasonable. The first of these diversions, a small swampy rivulet through thickets of Melaleuca ericifolia, was bordered on the far bank by an incredible mass of the so-called 'New Zealand Spinach', Tetragonia expansa. This was supported on a framework of decayed Melaleuca branches, all very intriguing to the youngsters, whose weight it would reliably support. Others were not all so fortunate. While some ingenious approaches to the problem of getting body and gear across the stream were successful, it proved just too easy to plummet straight through the Tetragonia canopy into the blanc-mange-like morass beneath.

In this swampy section an unfamiliar Stinging Nettle (Urtica sp.) with greatly elongated foliage, was noticed, with several larval 'tents' of Vanessa itea (Australian Admiral) in evidence.

Once across this section, and out of the Tetragonia, a derelict mutton-bird rookery slowed progress to a cautious pace. Here the more familiar introduced Stinging Nettle (Urtica urens) abounded. By inserting one foot in a disused mutton-bird burrow, and falling headlong (or thereabouts) to the ground, several members were afforded a better position from which to examine the plants closely. A number of larvae of Vanessa itea in various stages, were obtained from these.

The main party had meanwhile moved on to a patch of the Asclepias which had been seen through binoculars, growing on a dune directly ahead. The plants, on the northernmost side of the slope, were in remarkably lush condition for this time of the year, and many were in full flower. Their stature, reduced to 50-60 cms in height, with a considerably greater expanse, reflected the rigorous weather conditions sometimes encountered.

It took very few minutes to verify that a weak although viable colony of the butterfly did in fact exist in the area. A couple of eggs were collected, larvae were present in various instars, and several pupae were found. Apparently fresh pupal shells suggested that some adults may have emerged quite recently. This was shortly verified when several still soft adults were seen drying their wings in the weak sun.

A number of dead or moribund larvae and pupae were also noticed. It is possible that some infection may have been primarily responsible, yet it seems more likely that the winter cold, and the inescapable process of natural selection, may have played a part.

Mild as the day had remained, it was still midwinter, and some sense of disbelief arose at the sight of a number of adult butterflies flying over the dunes, only to be buffeted by the sharp winds back into the hollows, or into the lee of a shrubby Helichrysum cinereum. In spite of their presence, there was no sign of any over-wintering 'clustering' which had been half expected. This was a normal, if weak, breeding colony.

A further surprise was the capture by Tony Bishop of one Neolucia serpentata (Chequered Blue). Through the warmer months, this inconspicuous little butterfly is widespread in its occurrence, and particularly frequent, both inland and on the coast, wherever any of the Saltbushes are growing. The species extends into some of the wildest Tasmanian coastal areas, and it is quite reasonable that it has sufficient tolerance to cold to be on the wing, if unobserved, throughout the year.

Returning to where the cars had been left, a number of members had a final foray amongst the frequent clumps of Lamandra longifolia scattered through the coastal titree. Trapezites eliena, a skipper seldom seen on the wing although relatively abundant in coastal areas, was found to be well established, larvae once more being found in a variety of stages, indicating a prolonged spring emergence pattern.

W.N.B. Quick.

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HISTORY OF THE ENTOMOLOGICAL SOCIETY OF VICTORIA. PART 1.

Compiled by Susan Beattie.

An inaugural meeting was held at the home of Mr. F.E. Wilson on the 5th April, 1927.

Present were Mr. Wilson, elected President Mr. T. Greaves, elected Secretary and Treasurer, Mr. C. Barrett, elected Chairman, and Rev. Nye, Mr. Deane, Mr. Davey, Mr. Blackwood, Mr. Roger, Mr. Borch, Mr. Robertson and Mr. Clark.

It was decided that the new Club be 'The Entomological Club', that meetings would be held on the first Tuesday of the month, and that subscriptions would be 5/- per annum.

The first general meeting was held at the home of Mr. C. Barrett, May 2, 1927 at which 16bmembers attended. As subsequent meetings were held at the homes of various members, a Chairman was elected at each meeting, usually the host at whose home the meeting was being held.

A decision was made that 7 official recorders be appointed for each order of insects and that a survey should be taken of a specific district e.g. Ferntree Gully. It was also decided to read a paper at each meeting prepared by a member, and that entomological 'rambles' would be held at frequent intervals throughout the year.

The Club year commenced with 14 members and membership had increased to 26 by the end of the year. These members included Miss Wise, Mr. V. Miller, Mr. Rayment, Mr. Parlett, Mr. Strong, Mr. Nilson, Rev. A. Westly, Mr. A. Wade, Mr. B. Smith, Mr. A. Brown, Miss Raff. During the first year, 11 monthly meetings were held, the average attendance being 16 and seven papers were read. Mr. Rayment spoke on 'Parasites of the Bees', Mr. A. Burns spoke on Sugar-Cane pests, Mr. F.E. Wilson spoke on 'Collecting on the Bogong High Plains' and 4 excursions were held to Plenty River at Eltham, to Ferntree Gully, to Mt. Evelyn and to Sandringham.

As the Club membership increased and to give the Club more of a public image, it was decided to hold quarterly meetings in an outside hall, whilst still holding the other monthly meetings at members' homes. The Victorian Horticultural Society Hall was chosen for this purpose.

May 1929 saw the decision to hold the monthly meetings at a central place in the city. Latham House (Swanston St.) was chosen and 3 new officers were decided on, these being Vice-President (Mr. H. Miller), Treasurer (Mr. B.Blackwood) and Hon. Correspondent (Mr. C. Borch).

1929-30 saw the membership increase from 27 to 35 members. 7 excursions were held and members gave talks on collecting trips or read a prepared paper at meetings.

At the May 1930 meeting the following office-bearers were elected:

President	- Mr. Rayment
Vice-President	- Mr. V. Miller
Hon. Secretary	- Mr. T. Greaves
Press Correspondent	- Mr. Borch

May 1930 it was decided to change the name of the Club to 'The Entomologist's Club of Victoria' and that a sub-committee of 3 be appointed to organize the work of compiling a catalogue of the Insect fauna of Victoria with Mr. Clark.

September 1930 saw the retirement of Mr. Greaves to take up a position in Canberra, and Mr. Clark took over the position of Secretary. In October 1930, brief rules were drawn up by the Committee for the Club's organization, one being: "that Offices of the Club consist of President, Vice-President, Secretary and Treasurer, with 3 other members on the Committee".

Special meetings were occasionally held to hear interstate speakers, such as Mr. Waterhouse and Mr. H. Carter from Sydney, Mr. G. Hardy, Univ. of Brisbane, Prof. Wheeler from U.S.A., and Dr. Tillyard from Sydney. These meetings were contrived to fit in with the speakers' itinerary.

May 1932 elected were President Mr. A.N. Burns, Vice-President Mr.R.Pescott, Secretary Mr. A. Brown, Treasurer Mr. Blackwood, Committee: Miss Shaw, Mr. Goudie, Mr. F.E. Wilson. Members continued to give talks at each meeting although the occasional visiting interstate entomologist was invited to speak or read a paper.

1933 - Those elected at the May meeting were: President Rev. E. Nye, Vice-President Mr. C. Borch, Secretary Mr. J. Clark, Treasurer Mr.R.Blackwood, Committee: Messrs. Pescott, Ward, Wilson. Membership stood at 45. 11 monthly meetings were held with the average attendance 18. The Club moved its central meeting place from Latham House to Forrester's Hall (Royal Australian Ornithological Union), Latrobe Street, in July, occasionally holding meetings at the National Museum. Messrs. Greaves and Parlett, both Foundation members, were made Honorary Members.

1934. At the May meeting Mr. F.E. Wilson was elected President; Mr. R. Blackwood Vice-President and Treasurer; Mr. Ward Honorary Secretary; Committee: Rev. Nye, Messrs. Clark, Burns, Borch. The total membership stood at 47. Seven meetings were held at Forrester's Hall, the others at the National Museum. An average of 18 people attended at which members spoke on various entomological topics, e.g. Mr. Clark 'Arthropods', Mr. Borch 'Collecting near Toowoomba'. Two Committee meetings were held at the home of Mr. Wilson to draw up the syllabus for the year's activities. No excursions were held.

A members list up to 1934 was as follows:

Mr. L. Allen (joined 4.10.27)
Mr. W. Andrew (4.6.29)
Mr. J. Anderson (5.7.34)
Mr. N. Andrewartha (7.5.31)
Mr. C. Barrett (5.4.27)
Mr. G. Brown (5.2.31)
Mr. & Mrs. A. Burns (12.7.27)
Mr. C. Burgiss (21.6.29)
Mr. J. Bowen (1.6.33)
Mr. A. Butcher (7.8.33)
Mr. S. Chidgey (9.7.28)
Mr. A. Chisholm (1.6.33)
Mr. J. Clark (5.4.27)
Mr. K. Clark (2.8.34)
Mr. H. Clenton (June, 34)
Mr. J. Cook (2.7.28)
Mr. J. Cockrem -
Mr. J. Davies -
Mr. & Mrs. C. Deane (5.4.27)
Mr. J. Evans (6.11.30)
Mr. R. Fowler (4.9.29)
Miss J. Fenton (6.12.34)
Mr. F. Hence (1.5.30)
Mrs. Hinge (2.7.31)
Miss Huckerly (5.10.31)
Mr. I. Gibson (4.8.32)

Mr. J. Goudie (6.11.30)
Miss E. & L. Graham (1.5.30)
Mr. A. Greaves (5.4.27)
Mr. T. Greaves (5.4.27)
Mr. K. Guichard (3.5.34)
Mr. J. Grove (5.8.29)
Mr. C. Ives (June 34)
Mr. M. Jenkins (5.5.32)
Mr. L. Johnson (6.8.27)
Miss D. Kidd (5.12.29)
Mr. S. Levick (6.8.27)
Mr. G. Lorimer (3.4.30)
Miss B. Metcalf (6.6.29)
Mr & Mrs. V. Miller (7.6.27)
Mr. T. Mills (6.11.30)
Rev. E. Nye (1.6.33)
Mr. & Mrs. B. Blackbourn (4.4.29)
Mr. R. Blackwood (5.4.27)
Mr. G. Borch (5.4.27)
Mr. E. Bourne (3.7.30)
Mr. A. Brown (12.7.27)
Mr. E. Nye (1.6.33)
Mr. S. Parlett (5.4.27)
Mr. R. Pescott (5.6.30)
Mr. A. Pike (3.5.34)
Mr. J. Preston (1.5.31)
Miss J. Raff (12.7.27)
Mr. T. Rayment (7.6.27)
Mr. Robertson (5.4.27)
Mr. W. Rogers (5.4.27)
Mr. M. Scanlon (3.7.33)
Miss R. Shaw (2.5.27)
Mr. F. Smith (5.5.32)
Mr. E. Smith (3.5.34)
Miss H. Steele (4.5.33)
Mr. C. Trevelyn (5.10.31)
Mr. A. Tubb (4.4.35)
Mr. A. Wade (12.7.27)
Mr. G. Wade (1.3.33)
Mr. K. Ward (3.3.32)
Rev. A. Westley (7.6.27)
Mr. Williams (2.6.32)
Mr. & Mrs. F. Wilson (5.4.27)
Miss Wise (5.4.27)

1935. In May Mr. R. Pescott was elected President: Mr. R. Blackwood Vice-President and Treasurer; and Mr. Ward Secretary. Committee: Messrs. Wilson, Nye, Burns, Smith. At this meeting the word 'Club' in the name was changed to 'Society' thus the name of the Society became 'The Entomological Society of Victoria'. Total membership dropped to 33, mainly due to members obtaining posts in the newly formed CSIRO. Average attendance during this period stood at 16 at the eleven monthly meetings held. Members' talks included 'Australian Entomologists of the Past' - Mr. Wilson; 'Insect Problems in Victoria' - Mr. Ward. The Committee decided to produce a quarterly publication under the direction of Mr. Blackwood.

1936. In May Mr. F. Wilson was elected President; Mr. A. Burns Vice-President; Mr. K. Ward Secretary and Mr. R. Blackwood Treasurer. Committee: Messrs. Pescott, Smith, Nye, Deane. In June 1936, the first Constitution was drawn up and agreed upon. Members continued to read papers at the 11 monthly meetings held on average of 12 members attending. Subjects included 'The History of Applied Entomology' by Mr. Pescott, 'Click Beetles' Rev. Nye, 'Trip to Bellinden, Nth. Queensland by Mr. C. Barrett. There were 32 members on the Members' List.

1937. At the May meeting Mr. A. Burns was elected President; Rev. Nye Vice-President; Mr. R. Blackwood Treasurer; and Secretary Mr. K. Clark. Committee: Messrs. Wilson, Brown, Deane, Smith. Membership stood at 27 with 11 monthly meetings at Forrester's Hall. Talks included 'Entomologists now living' (Mr. Wilson), 'Timber Borers' (Mr. Bowen), 'Mounting and Preserving' (Mr. A. Burns). There was an average attendance of 18 members. Two excursions were held during the year - to Wattle Glen and Frankston. Messrs. Blackwood, Deane, Wilson, Rev. Nye and Miss Wise, five foundation members were still on the members roll.

1938. Elected at the May meeting were: President Rev. Nye; Vice-President Mr. Johnston; Secretary Mr. K. Clark; Treasurer Mr. R.Blackwood; Committee: Messrs. Burns, Wilson, Brown, Preston, Blackbourn, Miss Lindsay. Membership stood at 27. 11 monthly meetings were held at Forrester's Hall, with papers that included 'Biology of Silverfish' read by Miss Lindsay, 'Citrus Pests' read by Mr. Johnston, 'Spiders' read by Mr. Hince. An average of 14 members attended. The Committee met once during the year to discuss the syllabus for talks at the monthly meetings.

1939. At the April meeting Mr. C. Johnston was elected President; Mr. F. Wilson Vice-President; Mr. R. Blackwood Treasurer, Mr. K. Clark Secretary. Committee: Messrs. Hince, Hogan, Pescott and Preston. 32 members were on the roll. 11 monthly meetings were held with talks that included 'Instinct or Intelligence in Insects' Rev. E. Nye, 'Trip to Western Australia' Mr. E. Wilson. 14 members constituted the average attendance at meetings and the Committee met once to discuss the syllabus for the year.

1940. Those elected at the April meeting were: Mr. A. Burns President; Mr. A. Brown Vice-President; R. Blackwood Treasurer; Mr. J. Preston Secretary. Committee: Messrs. Hince, Wilson, Clark, Deane, Mules, Brown. 27 members were on the yearly roll. At the 10 monthly meetings talks included 'Primitive Insects' by Miss Raff and 'Victorian Skippers' by Mr. A. Burns. Instead of the March meeting, a very successful display exhibition was held at the National Herbarium Hall, and proceeds of this show, £1.15.6, were handed to the Army Comfort Fund. Three Committee meetings were held, two with the purpose of listing Common names of Victorian insects, Mr. Deane compiling a list of names already in use, and recommending others. Several outings were held, including one to Frankston.

List of Members 1940-41:

Mr. A.N. Burns (F.E.S.,B.Sc.,F.M.S.)
Mr. A.L. Brown,
Mr. & Mrs. B. Blackbourn
Mr. R.R. Blackwood
Mr. J. Bowan
Mr. H.F. Clinton
Mr. K.R. Clark
Mr. C. Deane
Miss J.H. Fenton
Mr. & Mrs. F. Hince
Mr. T.W. Hogan (B.Sc.)
Mr. C.J. Johnston (B.Sc.)
Mr. M.W. Mules
Rev. E. Nye
Mr. R.T. Pescott (F.E.S.,M.Sc.)
Mr. & Mrs. J. Preston
Miss J. Raff (F.E.S., M.Sc.)
Mr. E.T. Smith
Miss F. Smith
Mr. G. Wade
Mr. W.D. Waugh
Mr. F.E. Wilson (F.E.S.)
Miss M.J. Wise
Mr. & Mrs. Miller
Mr. T. Greaves) Hon.Life
Mr. Parlett) Members

New Members:

Mr. J. Etheridge
Mr.& Mrs.J.C. Le Souef
Miss Clark

1941. Poor attendance resulted from members either attending Active Service or wartime industrial occupations, an average of 9 attending the 8 meetings held. In April, Mr. A. Burns was elected President: Mr. A. Brown Vice-President; Mr. R. Blackwood Treasurer; Mr. Preston Secretary. Committee: Messrs. Johnston, Pescott, Deane, Wilson. Mr. Brown also temporarily took over the task of Secretary when Mr. Preston was committed to other activities. Talks included 'Eyes of Insects' by Mr. C. Deane, 'Order Anoplura Lice' by Mr. H. Clinton. Two Committee meetings were held, and the proposed Exhibition night could not be held due to war time safety precautions.

One excursion was held to Lang Lang, and several other smaller groups of members got together to arrange other excursions, mainly to search for Lepidoptera.

1942. Mr. J.C. LeSouef took over the position of Secretary from Mr. Brown with Mr. Blackwood as Treasurer. In May 1942 the last meeting was held at Forrester's Hall and in July of that year, members met at the home of Mr. Wilson. Reminder slips were sent out to those members who may have been able to attend such meetings.

(To be continued.)

INSECTS AS FOOD

By J.F. Hutchinson.

From most parts of the world examples can be given in both modern and ancient times of people of all colours and creeds, using insects as a source of food. Pliny records that locusts were much eaten in the Parthians; Herodotus describes the method used by the Nasamones of powdering locusts for the purpose of baking them in cakes. Locusts, it seems, were and still are popular as a source of food. They are cooked in many and various ways, and are eaten in Arabia, Iran, Madagascar, Africa and India. Sometimes they are merely fried, the wings and legs being plucked off and the bodies eaten, flavoured with salt and pepper. In India they are curried. Another popular way of cooking them is to boil them for half an hour, season with salt and pepper and fry in butter. The author has tried without much success to cook the imagos of the Field Cricket (Teleogryllus commodus). When the wings and legs were plucked off and the remains fried in butter, the insects were quite greasy with a rather nondescript flavour.

Cicadas (Cicadidae) were popular in the time of Homer. Aristotle talks of the most polished of Greeks eating them, considering the pupae to taste the best. Present day people who eat them are the American Indians and the Australian Aboriginies.

The Australian aborigines because of their nomadic nature and harsh environment are forced to eat all manner of foods; needless to say, insects often form a part of their diet. McKeown (1944) informs us of ants, wood-boring larvae, lerp scales of Psyllids, honey from native bees all being eaten by aborigines. Witchetty Grubs are said to taste like omelette when placed in hot ashes until brown and crisp. The author spent part of 1972 in the Northern Territory and was able to taste some of the delicacies of the aboriginal people. The larvae of the Green Tree ant (Oecophylla smaragdina) are collected and may be eaten as they are; the idea of eating the still wriggling larvae is rather nauseating, but crushed and mixed with water, they are exquisite. The acid contents of their body give the water unbelievable thirst quenching properties.

Lerp insects (Psyllidae) have a protective scale covering, sugary in flavour. These have been eaten on a number of occasions in the country and around Melbourne. While not being found in large numbers, they can be rather pleasant, but very often the Eucalyptus flavour dominates.

In parts of East Asia the nymphs and adults of Dragon Flies (Odonata) are eaten. The nymphs can be found, very often in abundance in the late-winter and spring months in many streams, ponds and lakes. Fried in butter the meaty inside comes away very readily from the chitinous covering. Cooked this way, they taste like crayfish and are very palatable. They can also be boiled, and like sea-foods are rich in protein.

The larvae of the Mealworm (Tenebrio sp., Coleoptera) can be fried in butter, spread on a dry biscuit and eaten.

These are only a few of the many insects that have been and could be eaten; some of them have been tried and are rather insipid while others have been found to be extremely palatable and are highly recommended. Initially the social barriers to eating them are ominous, but once they have been overcome and the first mouthfuls ingested, the omnivorous Homo sapiens has another source of victuals.

Reference: 1944, McKeown, K. Insect Wonders of Australia (Angus & Robertson)

-ooOoo-

TOXIDEA ANDERSONI (KIRBY) - (ANDERSON'S SKIPPER).

(Lepideptera: Hesperiidae)

A further note on the information contained in D.F. Crosby's life history of this butterfly might be of interest.

A letter from F.E. Wilson, Dated 20/11/49 states: "...Have bred out the first example of andersoni, a female and have a larva also prepupal..."

Another letter from M.W. Mules, dated 23/11/49 states: "...Have bred out andersoni yesterday from pupa taken at Kallista, so that's that..."

Although there is a slight discrepancy in the dates, one or the other might have erred in this regard.

During this period Bill Mules took a number of life history photographs, blowing them up on his enlarger at home. They were developed and printed at the then CSIR dark room.

J.C. LeSouef.

THE HYMENOPTERA, PART 3.

By R.H. Besserdin.

EVANIDAE.

The Evanids, more commonly known as the Hatchet wasps, are a family of medium to smallish sized wasps which frequent over the whole of Australia, although perhaps they tend to inhabit the coastal areas of the continent, including Tasmania, more commonly. If you were ever to strike one of these wasps while out collecting, you would easily identify it by the fact that at first sight it may appear to have no abdomen, (which was something that once struck me while collecting in the Little Desert on titree). From the top, looking down upon them, their extraordinarily laterally compressed abdomen appears almost invisible. This is perhaps the most characteristic feature present in this unique family; so if you find a wasp with 'no abdomen', you will know that it is an Evanid. Actually, although their abdomen is very obscure from above and below, further examination from a lateral point view will show your error, because the gaster is actually quite visible and again very characteristic of this family. There is a thin stalk-like articule which is (abnormally as far as wasps are concerned) attached to the top of the propedeum (a large obvious segment situated at the extreme posterior end of the thorax). 'Normal Wasps' on the other hand, have the gaster attached to the bottom of the propedeum - between the coxae of the hind legs. This thin stalk, which is part of the abdomen, holds the remainder of the gaster on its posterior end, and because of the funny shape of this the gaster tends to look very much like a flattened out cow bell, dangling on the end of a stick. In the female the gaster terminates in the terminalia, a long spike-like projection, called the ovipositor. This ovipositor, as in most other wasps performs three duties at once, one - stinging, two - piercing thick cuticular prey and three - depositing eggs. Prey, generally, consists of insects, while they are still developing within the egg ootheca, as has been commonly observed in the Blattodea, or Cockroaches, and the pupal stages of a few other insects.

The adult wasps are nectar or pollen feeders and are often observed 'refuelling' themselves on the blooms of a variety of common native shrubs and trees, including Leptospermum (titree), Bursaria and Eucalyptus. During the day they are usually active feeders, sometimes running around quite rapidly over the flowers on which they are feeding, but on the other hand they may be just as inactive, and will remain quite still, or so it may seem, for short periods on one particular flower (selective feeders).

General appearance. Colours are usually very monotonous, ranging from jet black all over and often together with a covering of silvery hair mainly around the anterior parts of the body, particularly the head. The cuticle of the thorax usually has a rugose texture and is usually only partly covered in hair (setae). This rugose texture is a common characteristic feature of this family. By 'rugose' I mean that the cuticle appears to have a texture consisting of innumerable tiny dent-like structures which apparently add enormously to the overall strength of the cuticle, thus acting as a good source of protective armour plating. The abdomen, except for the petiole (the stalk), is usually soft and not armoured, but appears externally very smooth with a lustre, which sometimes matches that of glass. Although most Evanids are

usually dull in colour, some species may show signs of colours such as reds and reddy browns on their gaster and thorax. The wings are not an atypical shape for wasps, although they tend to be slightly more shortened and stubby than usual and often tinted in a faint smoke colour or a faint black. The big bulky thorax supports the long slender active legs of which the hind pair are the longest. In general, and unfortunately as usual, only a small amount of the life history and general habits of this family is known, but hopefully sometime in the near future someone will find the time, patience, and interest to devote a bit of his life to the study of this family because they are certainly a very interesting and unique group and worth the time and effort. I sincerely hope that this passage has acted as some sort of a stimulus to someone.

GASTERUPTIIDAE.

The Gasteruptiids are a distinctive group of rather unusual wasps that are often mistaken for Ichneumonids. Gasteruptiids belong to the same superfamily (Evanoidea) as the Evanids, suggesting they are quite closely related to one another. As far as I know, they have no common name but they are very easily recognised by their usual predominantly dark colouring, very long and slender build, and also, often by their very obvious and long ovipositors. I would claim that this family contains some of the weirdest looking wasps in Australia. They occur over most areas of our continent, wherever there is suitable prey.

Their prey consists generally of other wasps and bees. The type of places these wasps frequent are generally regarded as the nesting habitats of their hosts, usually rotting logs, dead but still standing tree trunks, mud-nests or sometimes mud banks. I have watched the activity of Gasteruption sp. as they scanned a large dead black wattle tree trunk, which formed the nesting habitat of a semi-gregarious species of Eumnid wasp, (the mud daubers or mason wasps). This Eumenid species, however, does not really have much to do with mud nests since it nests in tunnels in trees, and since there are usually hundreds of these burrows perforating the tree, then consequently there are also hundreds of Eumenid wasps busily flying about too. Such a community naturally attracts many predators among which, of course, are the Gasteruptiids.

They are not so easily noticed at first, mainly owing to their drab, dull colours but also owing to their slender build which helps to make them difficult to see, especially as they fly around amongst the branches of trees. Perhaps the thing that does make one notice them, however, is their characteristic flight pattern as they investigate the possible habitats of prey. This flight pattern usually consists of a slow unsteady hovering as the wasp rises and falls and jerks from side to side or sometimes indulges in short bursts of a steady flight and speeds to a new region, to further search for prey, if the last region was unsuccessful. This characteristic flight is used deliberately so that the wasp can thoroughly scan any area which it may regard as harbouring possible prey, and this scanning flight they can do quite easily and quickly, and still be quite sure at the same time of being successful - well, at least to the point of pin-pointing a burrow which the wasp feels is certain to hold prey. Once the wasp has decided upon a certain burrow, it then alights next to it and wanders around close by for a short period further investigating the area to 'confirm its

beliefs' (you might say). If the wasp, after investigation, considers that it has made a mistake in selecting that burrow, it will then again take to the air and search for a new area. However, if the wasp doesn't consider it has made a mistake with the burrow it selected, but feels positive of its holding a bit of suitable food on which to lay its egg, it will then 'rear' itself up to the hole, lift its hind quarters with the aid of its long hind legs and then manoeuvre its ovipositor into position and proceed to probe the burrow. An interesting point to know about, is that most wasps which display ovipositors of the kind found on Gasteruptiids have three components comprising them. These components are very obvious on dead wasp specimens, since on drying, the components tend to separate and curl slightly in random directions, but in a live specimen, especially one in flight, the three components are held tightly together to look like one single appendage. The two other components are the actual egg-laying instruments, the central component being the 'Style' or sting, but the most interesting point and, perhaps, the most significant concerning the investigation of the host's habitat, is that the two outer components which perform the egg-laying functions are also very important sense organs, which are used to indicate to the searching wasp whether or not prey is available in a certain burrow; this removes the need for the wasp to crawl into the burrow and face a possible fight with the tenants or even other predators that may lurk somewhere deep down.

N.B. Earlier on I called the wasp ovipositor an appendage. This appendage is in fact the terminalia of the female wasp but is collectively known as the wasp's 'ovipositor'. In reality only the two outer components of this appendage are in the true sense ovipositors, which by definition are tubes used by insects to deposit eggs. The third components is only significant in use for the paralysis of suitable prey and as a defence mechanism against smaller enemies. This, I am happy to mention does not include small entomologists (within reason); your skin, fortunately is usually too tough for them to pierce in good time).

After probing the burrow with its ovipositors and sensing whether or not there is prey, the wasp will then either retract its ovipositors and fly away or begin the process of paralysing the prey by stinging it several times in certain sensitive areas (much like giving an anaesthetic before an operation); then in time the eggs are transferred in a compressed form down the ovipositors and deposited upon the paralysed prey. I have not been able to further study the egg-laying habits enough to be able to continue, although I hope to be able to soon. It would be significant to know just how many times and where the prey is stung, where the eggs are laid and how many, when the larvae hatch, where they pupate, and when the fully fledged imago hatches. I could not find out and as a matter of fact, I do not think anyone has found out so far, but I hope this article has helped stir someone's interest to do so. These wasps are strange and provocative to watch as they fly about, I do not think there is anything on earth quite like them; it would be a shame to see this diversely formed and most interesting group of wasps go by neglected in a modern scientific world full of opportunity.

CHRYSIDIDAE.

The Chrysids, more commonly known as the Emerald wasps, or cuckoo wasps, are perhaps one of the most spectacularly coloured groups of wasps in Australia. This family ranges over the most of Australia, and like the majority of our other wasp families, occurs more commonly around the eastern coastal zone.

Australia has been quite unfortunate really in the colour forms of its Chrysids. Australian Chrysids, although they are a very spectacularly coloured group of wasps, have a quite monotonous colour range compared to most European Chrysids. The Chrysididae familiar in our country rarely shows much colour variation from the usual emerald green (hence the common name) or aqua, although some forms may display a blue, deep copper or sometimes a purple. European Chrysids are probably amongst the most brilliantly coloured wasps in the world. They are true jewels, with their bodies sometimes combining several separate colours at once, and with a colour range that often displays irridescent lime greens, golds, yellows, lilacs and purples, aquas and emeralds, and ruby reds and sky blues and deep blues; they are guaranteed to make anyone gasp.

But, for all their beauty they are still spirited little parasitic wasps. Chrysids are parasitic mainly upon the mud-dauber groups of wasps. I myself, have observed these wasps parasitizing the small Crabonids, (Sphecidae) - a group of tiny, large headed wasps that bore holes into tree stems and lamp posts (whichever the most convenient at the time). I have also observed them actively at work at a Pseodozethus, (Eumenidae - Mason Wasps) burrow in an old tree stump. This Pseodozethus, incidentally, is the same species of wasp I mentioned earlier was acting as prey for the Gasteruptiids. At home, I recorded breeding about four rather large (12 mm), brilliantly blue species from a mud-nest of the Eumenid, Paralastor vulvipes, Sauss. The mud-nest of this Eumenid wasp was very strongly cemented, together with another nest closeby, inside a drainpipe; I removed both nests a few months before winter of that year. Chrysids have also been recorded hatching from the nests of several other genera, including Abispa, (Eumenidae) and the famous Yellow-banded Club Wasp, Sceliphron laetum (Sphecidae). An intersting point I have noticed concerns a part of their life history. The fully grown larva spins a thin yellowy-brown cocoon, which the imago breaks through on emerging. In the mud cell from which the Chrysid emerges, there are very few remains of any stored food or of the Chrysid's host. This suggests that the Chrysid larva may wait for the host larva to devour its own food supply before the Chrysid larva devours the host. This method of waiting would be used by the Chrysid larvae in order to allow time for the host to fatten up as much as possible before it itself 'set the dinner table'. In order to lay their eggs, the adult Chrysids must fly into the mud nests and burrows while the adult hosts are still constructing and in the middle of occupying themselves with their egg-laying duties. This presents a problem for the poor adult Chrysids, and this problem all boils down to one thing - getting into the host's nest, laying its eggs, and getting out - alive. However, nature has provided these brilliant wasps, not with a style or sting, but with a thickly plated, armour shield cuticle. In the face of danger, the Chrysids curl up into a tight ball making them virtually unscratchable, much to the annoyance of an angry host wasp. The cuticle is actually formed in a similar way to the cuticle on the thorax of the Evanids. Again, these wasps too, have a rugose or pitted texture to their skin which as I mentioned before, seems to add enormously to its overall strength. When in a tight ball, these wasps just become hopelessly impenetrable, covering up their only really vulnerable part - the soft, smooth, concavely shaped gastral venter, (ventral surface of the abdomen).

Adults are pollen or nectar feeders - actually, they are not very particular about their brand of fuel, Leptospermum, Bursaria and Eucalyptus all being popular. I tend, however, to collect them more frequently in summer filling themselves on Leptospermum. As you may have gathered by now, the usual hideout for Chrysids is where ever there might be food for young and old; old dead tree trunks, lamp posts, house walls, yourself (depending on how still you stand), shop windows and earthen mounds or banks (yes, money banks too!). One peculiarity I have noticed is that adults may sometimes over-winter by sheltering in places like under bark or rocks. I have several times found them during winter and early spring in this state. Australian Chrysids are generally small wasps, ranging from about 6 mm to 22 mm, our largest species being Stilbum splendidum, the Ruby Wasp. Surprisingly, a bit more is known about this group of wasps than one might expect with such generally small insects, but they are still in need of attention, and I think it could be well worth someone's while; for those who like owning showy collections, other than butterflies and beetles, the Chrysididae will provide you with more than just an opportunity!

-ooOoo-

ARTICLES NEEDED!

You may have noticed that the last few issues of "The Victorian Entomologist" have been rather slim. The Editor urgently needs articles for the next and subsequent issues.

Anything about the insects of Victoria or any other part of Australia is welcome, whether it is a record of life histories, a list of insects taken in a particular area, a note on a particular species, or observations on behaviour.

If your interest is in a group other than butterflies, then an article would be particularly welcome.

Remember, this magazine is one of the best ways of passing on your observations to other people!

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WRITE FOR CATALOGUE.

SERVICE TO MEMBERS

Anything to advertise?

We offer members the opportunity to advertise in our "Service to Members" column for a mere 5c a line.

So, if you need materials, literature, or information, or if you want to advertise the availability of these things, why not let the Editor know?

Copy should be received by the Editor by the 20th day of the month before the issue in which it is to appear.

(N.B. Advertisements of insects for sale not accepted.)

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The ENTOMOLOGICAL SOCIETY of VICTORIA

Membership

Any person with an interest in entomology shall be eligible for Ordinary Membership. Members of the Society include professional, amateur, and student entomologists, all of whom receive the Society's bi-monthly journal, the "Victorian Entomologist". Excursions are arranged to areas of topical interest at intervals, mainly during the warmer months. Lectures by guest speakers or members are a feature of most meetings, at which there is also ample opportunity for informal discussion between members with like interests.

Objectives

The aims of the Society are:

(a) to stimulate the scientific study and discussion of all aspects of entomology,

(b) to gather, record, and disseminate knowledge of all Australian insect species,

(c) to compile a comprehensive list of all known Victorian insect species, and

(d) to bring together in a congenial and scientific atmosphere all persons interested in entomology.

Meetings

The Society's meetings for 1973 will be held at Clunies Ross House, National Science Centre, 191 Royal Pde., Parkville, at 8 p.m. sharp, on the second last Friday of even months, commencing with the Annual General Meeting in February. Visitors are always welcome.

Annual Subscriptions:	$
Ordinary Member	3.00
Country Member	2.00
Associate Member	1.00
Junior or Student	1.50

(Associate members do not receive the journal.)

Notwithstanding the rates shown herein, rising costs and rates of postage, &c. may at some stage necessitate an increase in annual subscriptions

The statements and opinions expressed in articles herein are the responsibility of the respective authors, and do not necessarily indicate the policy of the Society.

NATIONAL MUSEUM 15 OCT 1973 OF VICTORIA

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Diary of Coming Events

October 19th., 1973, 8.00 p.m. GENERAL MEETING, Clunies-Ross House, 191 Royal Pde., Parkville. The Guest Speaker is Mr H.B. Wilson. Subject: Insect Telergones & Pheromones.
Subsequent General Meeting: December 14th., 1973.

COUNCIL MEETING

Friday, November 9th. 7.30 p.m.: Venue to be advised.

EXCURSIONS

November 3-6 inclusive. (Cup Weekend). Southern central area of the Big Desert.

November/December. The excursion to Mt.Macedon, originally scheduled for late November, has been moved ahead to December 2nd. (Sunday). Details elsewhere of these events.

Christmas/New Year: Extended trip to Suggan Buggan.

Late January, 1974: Extended trip to East Gippsland rain-forest area and Cape Everard environs.

Mid-February, 1974: Whipstick Scrubs near Inglewood. Repeat visit.

N.B. Throughout the summer months cancellation of excursions could occur owing to fire hazard. Check the December Journal, or contact the excursion co-ordinator for the period concerned.

Reports & Notices.

GENERAL MEETING: Friday August 23rd., 1973, at Clunies Ross House.

Mr J.C. Le Souëf chaired the meeting, which was attended by 40 members and friends. A special welcome was extended to Mr J. Barnes. Apologies were received from Messrs A.D. Bishop, Charles McCubbin, W.N.B. Quick, A.Neboiss, P. Carwardine and Miss L. White. The minutes of the last meeting were read and confirmed.

Correspondence was received from:

(1) The Australian Entomological Society: Circulars 233-235.
(2) Clyde H. Wild, Department of Entomology, University of Queensland, who is studying the ecology and binomics of freshwater Culicoides (Ceratopogonidae: Diptera).
(3) Keith Hateley, accepting Honorary Membership.
(4) Andrew Atkins, giving notification of change of address.
(5) Murray S. Upton, CSIRO., who has just completed a study of Mercury-Vapour lights.

Exhibits.

Ray Besserdin:	Chrysidea.
Bob Condron:	Moth larvae (Geometridae) showing faultless camouflage.
J.C. Le Souëf:	Kumaressa sp., one of the Hemiptera (Bugs) from tropical rainforest.
Dennis Black:	Various insects from Queensland, including Lepidoptera and Hymenoptera.

General Business:

The Treasurer reported a sound credit of $100-79, with well over 70 members financial.

Nigel Quick was elected -- in absentio -- as excursion co-ordinator for the period August 24th. - October 19th.

It was suggested by Mr David Crosby that a roster be drawn up amongst members to provide minimum exhibits at each meeting.

The Evening's Address:

In the absence of a guest speaker owing to unforseen circumstances, the Society is indebted to Mr Ray Manskie for providing and showing a most interesting series of slides at such short notice.

-ooOoo-

Members will note amongst the 'apologies received' the name of our President, Charles McCubbin, who was involved at the time, with Mr Warren Bonython of S.A., in the final stages of their successful attempt to be the first white men to cross the Simpson on foot. A great feat deserving the congratulations of all members.

COUNCIL MEETING: September 21st., 1973, at 20 Alimar Rd., Glen Waverley.

(1) Following a suggestion by Mr David Crosby at the last General Meeting that a roster, to ensure a minimum level of exhibits at meetings, be drawn up, it was decided to initiate such a system. Selected or volunteer members will be appointed at each meeting to provide exhibits for the following meeting.

(2) The Treasurer reported a current financial standing of $98.79, with 85 members financial.

(3) It was noted by the Librarian that an entry in the News Bulletin of the Australian Entomological Society has not been made for some time in the available "News from Affiliated Societies" section. He suggested that regular entries be made by the Secretary, with a summary of this Society's activities, and abstracts of our Journal.

(4) A further suggestion by Mr Hutchinson was that council members' attendendances at Council meetings be included in future Reports from the Secretary.

(5) Mr Hutchinson suggested that some thought be given to establishment of 'Life Membership' subscription rates.

-ooOoo-

News in Brief

Over the last few months the following correspondence has been received by the Editor:

(1) Mr R. Dirig, for TIEG, requested information regarding our emblem -- and permission to reproduce it -- in an article on letterheads involving insects to appear in their Newsletter.

(2) Mr A. Frazer, of Australian Entomological Supplies, enquired regarding advertising rates in the Journal, and has placed with us the advertisement which appears in this issue.

(3) The Australian Museum has requested further information subsequent to the appearance of an article on migrating butterflies published in the June issue.

-ooOoo-

Social Trip to Brisbane.

Instead of our normal July trip to the far north, this year Mary and I decided to take the coast road as far as Brisbane, calling on entomologists and old friends on the way. We had ideas of doing some collecting but the slow, winding road and traffic inhibited any stopping for this purpose.

In Sydney we had the pleasure of spending several nights with Greg and Anne Daniels, and the weekend, when their 'flu had subsided, with John and May Peters.

Naturally, there was a great deal to talk about with Greg and Anne. We looked through his collection -- particularly his Robber-flies -- and discussed their projected round-Australia working and collecting trip with the Moulds. He was busy converting his Toyota to a camping body, and preparing all the necessary equipment to take with them.

During our stay with them, we drove to the city each day, quickly learning the eccentricities of the fast and efficient flow of Sydney traffic. One of the various calls we made was on Dr Courtenay Smithers at the Australian Museum. On his pet subject of the distribution of the Wanderer Butterfly, he expressed the opinion that they would not be found in the winter on Phillip Is., but that there was a small over-wintering colony at Sale in Gippsland. He will have learnt with surprise of the results of the Phillip Island excursion.

Another call of interest was at the Macleay Museum at the University. Here we found what could be termed a 'museum museum', with a fascinating array of specimens, many of historic interest, collected by this outstanding man. Many of the insects have gone to Canberra, but there is still much of the collection left there. They are housed in magnificent antique cabinets with craftsmanship rarely seen these days, and worth a visit to see regardless of their contents.

The night we stayed with John and May Peters, they were kind enough to invite John and Mary d'Apice as well as Greg and Anne for a most interesting evening's discussion. John d'Apice, just returned from a trip to the Northern Territory, brought a banana carton with some 200 larvae and pupae of Virachola smilis dalyensis for us to admire.

Having in mind our meetings here in Melbourne with up to some 40 members present, it was with some anticipation that we went with Greg and Anne to the regular meeting of the entomological section of the Zoological Society of NSW at the museum. But things are different in Sydney. Apart from the President and Secretary, there were only two boys and an elderly chap at the back, who took no part in the proceedings, and the four of us.

We stayed a few days on the Gold Coast before going on to Brisbane. The swamplands and their Gahnias have been replaced by canals and the magnificent waterfront homes so dear to the "developer's" heart. Beset by the winter migration of Victorians escaping their bleak skies, rain and gales, we were thankful to leave this sterile area and return to Currumbin, where we were able to find a 'Vacancy' sign, rare at this time of the year. We settled in near the Sanctuary, where we spent some time with Alec Burns, so long Curator of Insects at the National Museum (Melbourne). Later we went through his collection with him at Burleigh Heads, had a look at his tropical garden, and gazed at the magnificent view he has from his home on Big Burleigh. He is still actively involved in collecting, with a number of Mynes geoffroyi larvae in jars in his garage and study.

We had a look at the Burns Collection at the Bird Sanctuary, and the Bartlett Collection at the Coolangatta Zoo.

On the last day of our stay here, we set out for Mount Tamborine to see Garry Sankowsky of the Queensland Butterfly Co. Locals gave us directions, with the usual "you can't miss it", and eventually we found someone who actually showed us our way. It was indeed an experience to meet this enthusiastic young man with such a wide knowledge of butterfly foodplants. At home he showed us his own collection, and the commercial side of providing the wants of Australian collectors unable to visit the north. Many specimens are, of course, exported overseas.

After lunch, we went down the road to the site of his Butterfly Farm, where he has two and one half acres planted with many trees, shrubs and creepers in every available space, with a section for seedlings and cuttings, and a rearing insectary. It would be surprising if this were not one of the top Gold Coast tourist attractions in a few years, with the spectacular tropical butterflies flying free on the farm, and to the nearby rainforest pockets. Just before we left we met Garry's wife, another of the young generation of entomological wives enthusiastically sharing their husband's interest.

In Brisbane, Geoff and Sybil Monteith were good enough to ask us to stay with them. We were more than interested to look through the collections at the St.Lucia University under his curatorship. Here too we met Clyde Wild, one of our younger members a few years ago, and now doing his Ph.D. at St.Lucia. He is working on the biting midges, one of the attractions of the waterfront developments on the Gold Coast ! We also met Dr. Elizabeth Marks and Professor Kettle, as well as other members of the entomological department.

At their home, Geoff and Sybil showed us slides of their recent trip to Somerset on Cape York, and we were able to see the tremendous collection he has of that extraordinary group of small insects, the Aradidae, found only on the rain-forest floor. Sybil showed us some of the work of the CSIRO Long Pocket Laboratories, her painstaking task of making insect illustrations under high magnification. There is obviously no shortage of funds in the establishment of this project.

Our last port of call on the way home was at Glen Innes, to see Max and Barbara Moulds. We found them busy preparing for their trip, just as Greg and Anne were. We were grateful that they could take time off from their activities to entertain us for the night. There was much to discuss, and it was well after midnight when we eventually turned in.

Apart from the small part of his collection he had with him, the main interest perhaps was the opportunity of going through his Butterfly Bibliography with him. This has been a mammoth task, and will prove a boon to future taxonomists, with all the writers brought together for the first time.

Although the collecting was very limited, this was indeed a most rewarding trip.

J.C. Le Souëf.

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HISTORY OF THE ENTOMOLOGICAL SOCIETY OF VICTORIA. PART 2.

Compiled by Susan Beattie

In March 1961, Mr J.C. Le Souëf wrote to those persons who might be interested in re-forming the Society. An inaugural meeting was held at the National Herbarium on March 14th. of that year, at which approximately 20 persons were present. These included:

Mr & Mrs J.C., Master N. Le Souëf
Mr & Mrs A. Brown
Mr M.W. Mules
Mr A. Evans
Mrs G. Middleton
Mr D. McInnes
Mr D.F. Crosby
Mr D. Holmes
Mr R. Parnell
Mr R. Freeman
Mr A. Neboiss
Mr J. Hill
Mr F. Hallgarten
Mr R. Bell
Mr A. Smith
Mr R. Manskie
Mr C. Borch
Mr G. Rushworth

It was decided that the Society be again known as the "Entomological Society of Victoria", and that the previous constitution be re-adopted. Those elected to office were:

President: Mr J.C. Le Souëf
Vice-President: Mr D.F. Crosby
Committee: Mr A. Brown -- Secretary.
Mr M.W. Mules -- Treasurer.
Mr H. Borch.

Subscriptions of 10 shillings per annum were agreed upon, and also bi-monthly meetings to be held on the last Friday of the month at the National Herbarium. The first of these meetings was held on May 26th., 1961.

Excursions were held about every third month -- to the You Yangs, Anakie Gorge, Blackwood, &c. Guest speakers were invited to every third meeting, the intervening meetings left open for for general entomological discussion amongst members, or members themselves delivering the talk. The average attendance at the meetings was 25 members and friends.

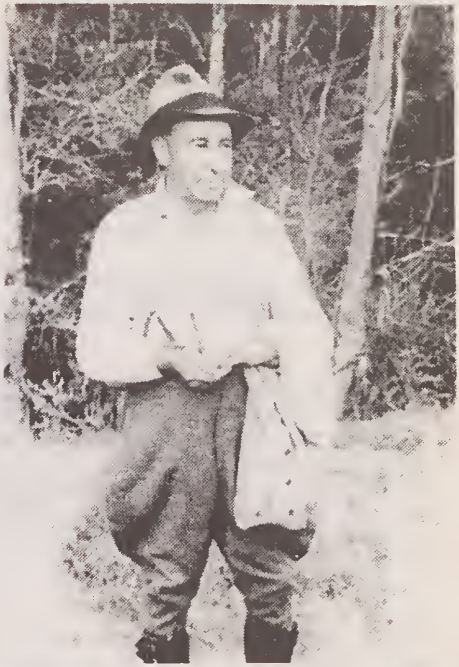
August, 1962, saw the inclusion of two new office-bearers, Mr R. Condron and Mr R. Manskie. Mr Crosby sent out 'reminder' notices to each member prior to the general meetings, that being the only printed matter the Society produced. In February 1965, Messrs Barnes and Strong undertook the task of initiating a newsletter, and in August of that year Vol. 1, No. 1 of "Wings and Stings", consisting of articles from various members, was sent out. Volume 1, No. 2 was published in February 1966. In 1968 Mr Barnes became Secretary and Editor, and continued to print and edit the Magazine until August 1970, sending out a copy to members before each general meeting.

From August 1971, bi-monthly meetings were held at the National Museum Theatrette, on the third Friday of even months. Office-bearers for 1971 were:

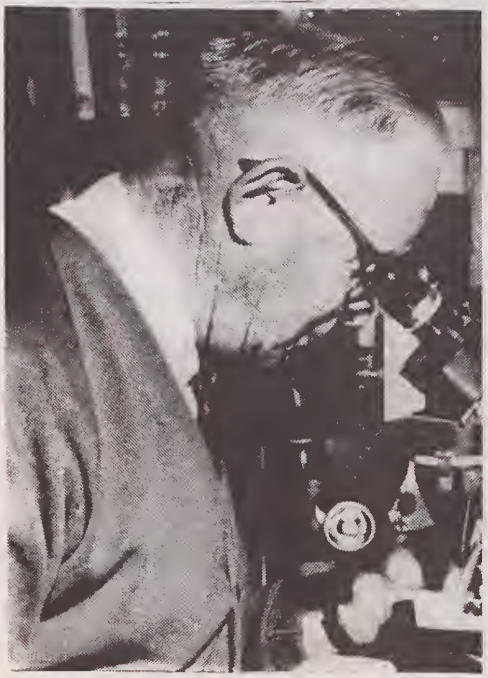
President: Mr C.W. McCubbin
Vice-President: Mr D. Holmes
Secretary/Editress: Miss S. Beattie
Treasurer: Mr R Condron
Committee: Mr F. Hallgarten
Mr P. Williams
Mr A. Hall
Mr B. Thompson
Miss J. Forse

At the suggestion of Miss Beattie, the name and format of the Journal were changed to encourage members to reprint their observations, and to increase membership. The Journal became 'The Victorian Entomologist'. The original constitution was revised, and an application for postal registration was accepted in March 1972.

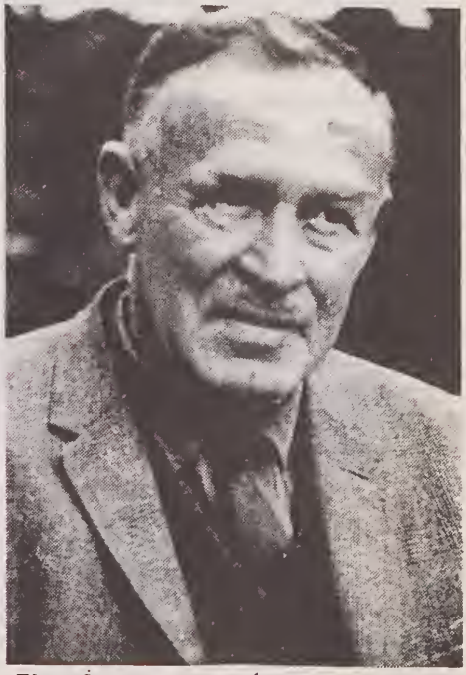
The late Charles Barrett, foundation member, and first Chairman. HERALD-SUN PHOTO



The late F.E. ('Ras) Wilson, foundation member, President 1927, 1934 & 1936.



A.N. Burns, (12:vii:27)., President 1932, 1937, 1940 and 1941. HERALD-SUN PHOTO



The late M.W. (Bill) Mules, Committee member 1940, and Treasurer 1961.

The positions of Secretary and Editor were separated in 1972, Mr R. Besserdin taking up the posting as Editor. Membership rose from 45 in 1971 to 72 in 1972, with 8 Government institutions receiving the Journal.

Excursions were held at intervals, including weekend and week-long trips to such areas as the Little and Big Deserts.

The Society commenced the task of helping survey an area in the Dandenong Ranges before and after control burning was carried out by the Forestry Commission.

Many interesting talks were given at General Meetings by both members and guest speakers. These included 'Aquatic Insects' (Mr P. Genery) and 'Grid Mapping for Faunal Surveys' (Dr B. Smith). With the increased attendance at General Meetings, and the need for additional seating accomodation, it was decided to hold 1973 General and Council Meetings at Clunies-Ross House National Science Centre. This has proved most satisfactory.

-ooOoo-

Delayed Ovarian Development and Aestivation in Adult Females of Heteronympha merope. (Lepidoptera: Satyrinae.)

The following abstract is reproduced from the Journal of the Australian Entomological Society, 1973, 12: 92-98, with the permission of the author, Mr E.D. Edwards, a taxonomist with the CSIRO Division of Entomology, Canberra.

'There are strong indications that in New South Wales there is a delay in ovarian development in females of Heteronympha merope merope (Lepidoptera: Satyrinae) and in addition, under hot conditions, aestivation may occur. A similar delay in ovarian development is indicated in H. mirifica but is probably not accompanied by aestivation. In both species females copulate soon after emergence, and adult males do not aestivate. Delayed ovarian development and aestivation, which have not previously been recorded in Australian Papilionoidae, are discussed in relation to climate.'

Two reprints of this paper are now in our Society's Library and are available for loan to those interested.

J.F. Hutchinson, Hon. Librarian.

Collecting Lamps -- A Warning.

A problem has arisen for entomologists using mercury vapour lamps for the collection of insects.

From our point of view these lamps fall into two categories; the high-pressure mercury vapour lamps which require a choke to operate them, and the "Blended" lamps with a tungsten filament as well as a mercury vapour arc, which have the great advantage that they can be plugged directly into the mains without a choke.

The problem mainly concerns these blended lamps. They used to emit light in the long-wave ultra-violet portion of the spectrum, and it was for this reason that they were attractive to many insects.

Over the last year the manufacturers have changed the internal phosphor coating of these lamps, and the "Blended" lamps now on the market do not emit any light in the long-wave ultra-violet portion of the spectrum. Although they may still attract some insects, they do not function as they used to, as the writer found to his cost on a recent survey: two lamps, an old and a new, were being used at the one time and the difference was quite striking.

The same phosphor coating is also being used in the high-pressure lamps but these, for some reason, still emit some light in the long-wave ultra-violet portion of the spectrum so they still attract insects though less efficiently than they did.

Some manufacturers can still supply -- from existing stock only I presume -- high pressure mercury vapour lamps with clear glass envelopes. These are most effective and were originally recommended for the Robinson Light Trap, but should only be used in traps as they emit short-wave ultra-violet light which can cause serious eye damage and sunburn with any prolonged exposure.

At the time of writing no answer has yet been found to the replacement of the "Blended" lamps.

Murray S. Upton.
CSIRO, Division of Entomology

The Society is indebted to Mr Upton for this advice which may save some members not only many wasted hours, but considerable expense. It is suggested that any interested collectors contact a reputable lapidary supply house for advise on any unit they may be contemplating.

A Quick Relaxing Method

By V. A. Brou.

From time to time articles are presented describing improved versions of relaxing boxes. My purpose in this writing is to convey an even simpler method used by this writer for several years with great success.

Surely all collectors at some time have grit their teeth when a prize papered specimen would not soften, or when trying to spread small Lycaenids and other fragile insects, only to tear their wings in an effort to spread the specimen. Even more, small Hesperidae that have been papered are extremely difficult to spread without some damage to the specimen.

The entire relaxing operation can be accomplished without the use of any type of container. Simply remove the specimen from the paper triangle, and inject the specimen with plain tap water. Any type of hypodermic syringe will do; a 10-ml syringe is perfect. A disposable syringe can be obtained at most any drugstore and will last many years. It is best to use a 20 or 25-gauge needle (U.S.). Insert the needle directly into the thorax of the dried specimen directly under the wings. Completely fill the thorax by pushing the plunger hard till the water squirts out the rear cavity. Place the specimen back in the paper into the paper triangle it was stored in and let stand for 5-20 min. This will allow the antennae to soften in case the water did not enter the antennae when injected.

This method is foolproof when using good quality papered specimens, regardless of age. Specimens which have rotted because of poor drying technique or specimens covered with fungus should be watched carefully as surface wetting will occur rapidly.

I have used this method successfully on well over 10,000 lepidoptera specimens of all types except micros. Coleopterists will find this method works quickly in softening beetles also. If a relaxing box is used in conjunction with this method, results are even better.

-ooOoo-

Mr D.R. Holmes, who obtained the above information from Vernon Brou, relaxes specimens for one night for preliminary examination, then injects with warm water. Allow to dry as for fresh specimens. W.N.B. Quick paints antennae with 50-50 methylated spirit and water as a precautionary measure even prior to handling.

A List of Butterflies Collected at Daly River Crossing, N.T.

By J.F. Hutchinson†

Few lists of butterflies exist for the Northern Territory; Angel (1951) and Couchman (1951) are two. A number are available for specific localities: Campbell (1945) lists species taken at Darwin and Le Souëf (1971) lists species taken at various localities, one of which is the Daly River Crossing. Le Souëf's list however is compiled from collecting done in June/July which is the dry season. This present list gives species collected from the Daly River Crossing and its environs in January 1972, which is the wet season, and when a different butterfly fauna may be on the wing.

Daly River Crossing is situated about 145 km south of Darwin. It is an area which in the future will be important from a recreational point of view because of its close proximity to Darwin and its aesthetic appeal. At present there is an unsealed road in from the Stuart Highway, but this is to be sealed soon, which will make the area much more popular.

Apart from the immediate river banks the vegetation is basically savannah woodland with Eucalyptus miniata (Darwin Woollybutt) and E. tetrodonta (Darwin Stringybark) forest. Pandanus spp., Terminalia spp. and Acacia spp. form the understorey, with tall rank grasses. Termite mounds abound.

A highlight of the trip was the brief period collecting at the cashew-nut plantation of Mr R. Judge, who has spent most of his years on the Daly River. This is also the type-locality for Virachola smilis dalyensis taken by Le Souëf in 1969 (Le Souëf & Tindale 1970). Unfortunately this was not taken, but a number of other species were, including Danaus chrysippus petilia, Papilio demoleus sthenelus and the usually uncommon Phalanta phalantha araca.

One of the environs of the Daly River Crossing is Butterfly Gorge; this is a local name for an extremely attractive area which is aptly named. Botanically the area varies considerably, with Banbusa arnhemica and Canthormean umbellatum dominating the lower reaches and mixed rainforest species along the creek. Species found include Acacia auriculiformis, Terminalia sericocarpa and several species of Eugenia. Nauclea coadunata occurs all along the creek. The number of plant species in these 'rainforest' areas can be quite high and may even contain some very large Melaleuca spp., usually M. argentea. Butterfly species taken in the gorge proper were: Graphium eurypylus nyctimus, Danaus hamatus hamatus and Eurema hecabe phoebus, while on the ridges the following Hesperiids were taken: Pasma polysema, Taractrocera dolon diomedes, T. ina, Pelopidas lyelli lyelli

† Scoresby Hort. Res. Stn., P.O. Box 174, Ferntree Gully.V., 3156.

and Ocybadistes walkeri olivia. The penultimate species has been recorded as a pest on sorghum, causing defoliation in the Kimberleys in 1970. (Common & Waterhouse 1972).

Dry Lake is also in the environs of the Daly River Crossing. It is situated on the Litchfield Station road and acts as a drainage basin for the surrounding area. There are extensive areas of Livistonia humilis and Pandanus spp. associations. Eucalyptus papuana (Drooping White Gum), E. foelscheana (Fan-leafed Bloodwood) and Melaleuca spp. are associated with these areas, and vary according to drainage patterns. Butterfly species taken here included: Cepora perimale scyllara, Precis orithya albicincta, and Mycalesis sirius sirius.

The following list employs the taxonomy adopted by Common and Waterhouse (1972). Species marked thus * are those for which the Daly River Crossing and its environs appear previously unrecorded localities.

In addition to the references cited in the text, Waterhouse and Lyell (1914), D'Abrera (1971) and McCubbin (1970) were also consulted. Coding is as follows:

A: Daly River Crossing
B: Dry Lake
C: Butterfly Gorge
D: Bob Judge's Plantation

HESPERIIDAE:

Pasma polysema (Lower) 'Polysena Skipper'	C *
Taractrocera dolon diomedes Waterhouse	C *
Taractrocera ina Waterhouse 'Ina Grassdart'	C
Ocybadistes walkeri olivia Waterhouse	C
Telicota colon argeus (Plötz) 'Pale Darter'	C
Pelopidas lyelli lyelli (Rothschild) 'Lyell's Swift'	C

PAPILIONIDAE:

Graphium eurypylus nyctimus (W & L) 'Pale Green Triangle'	A,C *
Papilio canopus canopus Westwood 'Canopus Butterfly'	A
Papilio demoleus sthenelus W.S. Macleay 'Chequered Swallowtail'	D
Cressida cressida cassandra (W & L) 'Big Greasy'	A

PIERIDAE:

Eurema hecabe phoebus (Butler) 'Common Grass Yellow'	A,C
Elodina perdita walkeri Butler	A

Cepora perimale scyllara (W.S.Macleay) 'Australian Gull'	A,B
Appias paulina ega (Boisduval) 'Common Albatross'	A
NYMPHALIDAE:	
Danaus chrysippus petilia (Stoll) 'Lesser Wanderer'	A,B,D
Danaus hamatus hamatus (W.S.Macleay) 'Blue Tiger'	A,C
Euploea core corinna (W.S.Macleay) 'Common Aust. Crow'	A
Euploea sylvester pelor Doubleday & Hewitson	A
Euploea darchia darchia (W.S.Macleay)'Darwin Brown Crow'	A
Mycalesis sirius sirius (Fabr.)'Cedar Bush Brown'	B
Hypocysta adiante antirius Butler 'Darwin Ringlet'	A
Hypolimnas bolina nerina (Fabr.) 'Common Eggfly'	A,B,D
Hypolimnas misippus (Linnaeus) 'Danaid Eggfly'	A
Precis hedonia zelima (Fabr.) 'Brown Soldier'	A
Precis villida calybe (Godart) 'Meadow Argus'	A
Precis orithya albicincta (Butler) 'Blue Argus'	A,B,C
Phalanta phalantha araca (W & L) 'Leopard'	A,D
Acraea andromacha andromacha (Fabr.) 'Glasswing'	A
LYCAENIDAE:	
Narathura araxes asopus (W & L)	A,C,D*
Nacaduba kurava felsina (W & L)	A
Catopyrops florinda estrella (W & L)	A
Anthene lycaenoides godeffroyi Semp. 'Pale Ciliate Blue'	A
Catochrysops panormus platissa (H-S) 'Forget-me-not'	A
Zizeeria knysna karsandra (Moore)'Dark Grass-blue'	A
Zizeeria alsulus alsulus (H-S) 'Black-spotted Grass-blue'	A
Freyeria trochylus putli (Kollar) 'Grass Jewel'	A

It was disappointing not to take Virachola smilis dalyensis; Le Souëf took his specimens in June/July which is in the dry season when this insect may be flying.

Liphyra brassolis melania may also be present in the area as many trees have nests of Oecophylla smaragdina (Green Tree Ant) in them and it was only an oversight on the author's part that prevented him looking for it.

This list represents about one third of the 100 or so butterfly species that have been recorded from the Northern Territory, and it appears that relatively few species are on the wing at this time of the year in what would appear to be one of the best times for collecting. It seems that the emergence times are more varied than one would expect, but this applies to a few species only, with the more common ones on the wing for most of the year.

It was thought desirable to publish the list in order to determine any changes in the butterfly fauna that may occur when civilisation encroaches on this area, as it becomes more popular as a tourist resort, and also because no list is available for this area at this time of the year.

The assistance of Mr W.N.B. Quick with the identification of species, and of Mr J.C. Le Souëf,(who instigated the trip),for his valuable comments, is appreciated. I am also grateful to Dr I.F.B. Common for his criticism of an early draft of this manuscript.

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An Appreciation

The Society is indebted to Mrs A. Neboiss for her time and effort in typing the stencils for the previous edition of the Victorian Entomologist.

The Big Desert --- September 15-17, 1973

Survey collections in October/November of 1971 and 1972, made in the southern central area of the Big Desert, included a number of most interesting insect species. Some of these have been referred to by D.F. Crosby in Vol. 2: No. 3 of the Victorian Entomologist for June 1972.

Previously unrecorded from Victoria, and rare elsewhere, the butterfly Ogyris otanes was first collected here in 1971. This was an unexpected result of a fruitless search for the elusive O. idmo, which may yet be found to inhabit the area. At that time a plant, presumed incorrectly to be a Choretrum, was searched in vain for signs of the early stages. It was not until late October, 1972 that the true Choretrum, the host plant, was finally located after an extensive search. It is a comparatively rare, semi-parasitic shrub of some 1 metre in height, largely confined to the fringes of low-lying areas.

The inter-relationship between the butterfly and the Choretrum is precarious, and appears linked not only with the presence or absence of the attendant ant (unidentified, but probably a Myrmophyma as on Kangaroo Is.), but also indirectly with immature Jassids.

Several specimens of the butterfly, reared from mature larvae in 1972, will enable a comparison to be made with reared specimens from Kangaroo Island, and its true status to be evaluated.

It is interesting to note that while the adult insects were flying at the end of October, 1971, most were still in the larval stage at the same period of 1972. In mid-September of this year pupae were already present, and today, October 1, are on the point of emergence. This apparent susceptibility of the butterfly to seasonal climatic variation may apply equally to the related O. idmo, and account in part for its apparent disappearance from areas of former occurrence.

The desert is still obviously suffering from the effects of drought, although new spring growth is appearing. While 1973 may not provide a truly representative survey collection, the prospects for 1974, if time permits, would seem to be excellent.

It had been hoped that some additional specimens of a small Candalides, possibly distinct from, but formerly confused with, C. acastus (also present in the area), might be flying. Careful observation of this, and also C. cyprotus is still necessary to establish the host plants, and check on the early stages. In spite of the apparently early season this year, the few specimens of each which were seen provided little opportunity for such observations, and the host plant of C. cyprotus in particular remains a mystery. The host recorded for the

species near Sydney is one of the Broom-like legumes, Jacksonia scoparia. Within the survey area, the most closely-related plants seem to be Daviesia brevifolia and the relatively close Dillwynias. No trace of larvae has been noted on these to date, and the adults have not been observed to favour attention on their flowers.

Several Candalides hyacinthinus simplex were already about, and Lampides boeticus, the Pea Blue, was in evidence wherever Dillwynia was in flower. The erratic and rapid flight of this common little butterfly provided rather unexpectedly strenuous exercise before one was netted for identification.

Time did not permit more than a token search of the legion plants of Lomandra glauca for the undescribed larva of Trapezites sciron eremicola. The only record of the early stages of this desert skipper is still restricted to that of a very fresh pupal shell and cast larval head, found on a plant in the Little Desert in late October, 1969.

A brief search of odd clumps of Lepidosperma carphoides along the track close to camp provided several pupae of Motasingha dirphia trimaculata, a skipper commonly taken in these areas, but seldom reared.

What was initially one of the prime objects of this early visit proved to be somewhat of an anticlimax. Within Victoria, Motasingha atralba, the Black-and-white skipper, had, prior to 1971, been recorded from only one small area near Hattah Lakes. These insects appeared to represent a race distinct from South Australian specimens, and it was hoped to obtain specimens. The host plant, Gahnia lanigera is a pungent-leafed little sedge, widespread in occurrence, although locally restricted to the fringes of low-lying areas. In early November, 1971, D.E.A. Morton took one late specimen, a female, on the inter-dune flat to the north of Hill 3 (writer's reference). The Gahnia could not be located at the time, but was subsequently located in 1972, scattered through a low-lying area perhaps quarter of an acre in extent. Larvae of the second (autumn) brood were present in the second and third instars at that time, and not infrequent on the plants.

In order to obtain specimens of the adult insects or pupae, it appeared necessary to visit the area earlier than October, or during March/April. The recent brief visit was as stated earlier, for this purpose. D.E.A. Morton, who had checked the area some two weeks earlier, reported being able to locate only one pupa. D.F. Crosby, accompanying the writer, had little more success. Several additional small patches of the Gahnia were found in and around low-lying areas up to some 5 km west of Hill 1 (writer's reference) on the Murrayville Track. In these areas a number of apparently-fresh pupal shells were found, suggesting a slightly extended but

sparse spring emergence pattern. In this phase the species might be locally vulnerable to over-collecting. Certainly from the aspect of convenience alone, the more prolific autumnal brood seems preferable.

Of considerable interest was the capture by Mr Crosby of a single specimen of a Theclinesthes. The writer is not aware of any previous records from the immediate area, other than a species (T. onycha ?) recorded from the Wyperfeld National Park (†), and which, from a cursory examination of the present insect in the field, appeared very much darker. A late summer collection may disclose a much higher population density, and help clarify the situation. Possible host plants include Acacia spinescens, A. calamifolia and A. trineura. ‡

Out on the flats, the multitudes of Vanessa cardui were accompanied by many Precis villida (the Meadow Argus), every few paces putting up specimens of one or the other, sometimes both, which then spun off into the air in a frenzied dog-fight over a territorial intrusion which neither had caused. Precis villida appears restricted to the flats, but late in the day, the painted lady (V. cardui), together with occasional V. itea, exhibits very strong hill-topping tendencies. In regard to the presence of V. itea in the area, an infestation of the introduced Stinging-Nettle (Urtica urens) 46 km out of Yanac, and a second has been reported near Broken Bucket Reserve. These should be attended to without delay. No recognisable evidence of the presence of larvae of V. itea was noticed, and although no overall direction of flight of these three species was discernable, it is probable that all three had arrived in the area in a migration.

Delias aganippe, the Wood White, was occasional around the dunes. Both sexes were present, one female insect seen, but not captured, having the red areas of the hindwing underside largely replaced by yellow. The host plant in this area -- Santalum acuminatum, the Bitter Quandong -- had suffered badly during the drought, often to the point of defoliation, but is now in prime condition for the butterfly, with masses of lush young foliage. The species should be well in evidence, as larvae or pupae, at the time of the October/November excursion.

Neolucia agricola agricola, the Fringed Blue, which might have been expected to be frequent at this time of the year, was not seen. This little butterfly, dependent on flowers of the various Papilionaceae as hosts, must have been decimated during the drought months. Several worn specimens of the Chequered Blue (Neolucia serpentata serpentata) were collected on hilltops.

Although not specifically included in this collection, several Jewel Beetles (all Stigmodera spp., Buprestidae) were seen on flowers of the "Inland Coast Titree" Leptospermum laevigatum var. minus. Night light collecting was not very

productive, the air temperature falling rapidly after sunset, a process which continued through the night, reaching a minimum of -3°C about 3 a.m. At this time the writer, despairing of any hope of staying warm enough to sleep in his synthetic-fill sleeping bag, got up, lit a huge fire, and started making toast, only to discover that at this temperature Mr Peters' "always fresh, always soft" butter assumes many of the characteristics of obsidian.

On the return trip, after completing some last-minute photography of the area, a further very brief stop was made some 22 km. out of Yanac where a roadside strip of heathland flora persists. A number of small Lycaenids were seen flying around the wine-red flowers of Daviesia brevifolia. Their dark grey underside, devoid of any obvious markings other than subterminal series of whitish lunular spots, was strangely unfamiliar. Paradoxically, they proved to be Zizina otis, our common little Grass Blue or, more appropriately, Clover Blue. Under some local influence, their extremely dark underside was accompanied by a brighter and more lustrous blue than is characteristic of populations to the east. Further specimens from areas intermediate between north-western Victoria and Melbourne would form an interesting series. Other specimens, apparently just as dark, were collected simultaneously by A.D. Bishop some 48 km south of Ouyen.

† A record (unpublished) of D.F. Crosby.
‡ Common & Waterhouse, "Butterflies of Australia", (Angus & Robertson 1972) pp. 397-398. The exact locality is not stated, and the writer may be in error in assuming that the above refers to the Wyperfeld area.

W.N.B. Quick.

-ooOoo-

CORRECTION !

In Vol. 3, No. 4, August 1973, page 11, notes headed TOXIDEA ANDERSONI (KIRBY) - ANDERSON'S SKIPPER should read TOXIDIA ANDERSONI &c. The second quotation, commencing "Have bred out andersoni yesterday...." should read "Ras bred out andersoni yesterday....", the reference being to the late F.E. Wilson.. The Editor apologises for these errors.

-ooOoo-

BACK COPIES

Back copies of a number of issues of the Victorian Entomologist are still available from the Editor at nominal cost, plus postage if applicable.

Some Recently Published Books for the Entomologist.

Compiled by R. Besserdin

Termites: A World Problem. By Norman E. Kicken. $9.35 (Hutchinson).
Insects. Vol. 1. Peripatus, Myriapoda, Insecta. By David Sharp. $6.35 (Dover).
Butterflies of Trinidad and Tobago. By Malcolm Barcant. $8.15 (Collins).
Common Insects in New Zealand. By David Miller. $8.50 (Reed).

Insects of the World. By Walter Linsmayer. $15.00 (McGraw-Hill).

Insects. By Michael Tweedie. $3.25 (Orlis Books).

Australia's South-east: A Natural History. Part 2. By Stan & Kay Breeden. $16.00 (Collins).
Australian Rock & Tree Orchids. Densey Clyne. $1.50 (Lansdowne Periwinkle).
Wildflowers of the North & Centre. By Michael & Irene Morcombe. $1.50 (Lansdowne, Periwinkle).
Atlas of Animal Migration. By Cathy Jarman. $6.90 (Heinemann).

A Treasury of Australian Wildlife. Edited by D.F. McMichael. $ 1.95 (Ure Smith).

--ooOoo-

NOVEMBER EXCURSIONS

Over the Melbourne Cup weekend, November 3rd.--6th., a number of members will be continuing collecting and observing the insects of the southern central section of the Big Desert. Others will be seeing the area for the first time, and are advised to contact members who have been in the area in past seasons. Basically, drinking water is unavailable, although there is plenty for wasking-up this season. The nights can be extremely cold. Other requirements will depend on the length of stay planned. The area under study is reached via Nhill, thence to Yanac. From Yanac (Store & Garage) proceed north along the Murrayville Track for a distance of 44 km. (27.7m) to the base camp near "Hill 1".

Originally planned to take place at the end of November, the excursion to Mt.Macedon will take place on Sunday, December 2nd. The meeting place will be at the home of Mr & Mrs Schwarz, "The Bungalow" Guest House, Devonshire Lane, Mt. Macedon, at 10 a.m.

Should any members desire a longer, more restful weekend, Mrs Schwarz has advised that there will be ample overnight

accomodation for some 40 guests. Members who will be availing themselves of this accomodation on Saturday night are advised that if they will provide their own linen (sheets, towel, pillow slips, &c. -- or sleeping bag) there will be no charge for accomodation. In addition to this most acceptable invitation, light refreshments will be available (tea, coffee, biscuits). It might be a courtesy, if contemplating an overnight stay, to advise Mrs Schwarz at Mt.Macedon (054) 26-1313, or at the next General Meeting.

Mrs Schwarz has suggested that if substantial meals are required, Hotel counter lunches, or three-course meals at a nearby cafe, are available. Michael Schwarz will be on hand to supply local information.

The family Schwarz are members of the Geelong F.N.C., and as such are quite accustomed no doubt to collectors sorting things out in the evenings, and to the comings and goings of Will-o'-the-wisp lanterns of night-lighting entomologists. All of which adds up to the prospect of a most enjoyable weekend if the weather-man plays his part.

Our hosts will be attending the next (October) General Meeting, and any further information will be available at that time.

-ooOoo-

A Spring Appearance of Eurema smilax, the Grass Yellow.

(Lepidoptera: Pieridae)

As this page was being prepared, a telephone call was received from Mr J.F. Hutchinson, reporting the collection of a single specimen of the butterfly at Hastings today, October 4.

Two sightings were made, possibly of the same insect. Mr Hutchinson will be in the area again tomorrow, and will make a point of keeping an eye open for further specimens.

The species is not infrequent around Melbourne during the autumn months, but is seldom recorded at this time of the year. This record may provide a clue as to the direction of entry of these autumnal visitors, and their breeding areas. Recorded hosts are various Cassias and Neptunia gracilis. Cassia australis occurs in Eastern Victoria, while several other species, some of them native, are grown extensively in gardens.

New Members' Subs.

The attention of New Members, who have joined the Society during the latter half of 1973, is drawn to a decision of the Council (Vol. 3, No. 4, p.3) regarding entitlements of these members to the Journal. Briefly, subscriptions paid late in the year entitle that member to receive all issues of the Journal (including back-issues) for the year, but the subscription should be renewed at the first meeting for 1974, or by mail.

Alternatively, these members may elect to purchase the Journal at meetings until the end of this current financial year, and apply their subscriptions to 1974. In all other respects they are regarded as fully financial members from the date of application for membership.

This proceedure will greatly assist the publications committee maintain a card-indexed record of postings in an up-to date condition.

Would members to which this may apply please advise the Editor or one of the Publications Committee as to their preference, either a . the October General Meeting, or by mail.

-ooOoo-

Junior Members.

Juniors, and others, are sometimes confronted by problems or queries regarding techniques of preservation or preparation of specimens: or perhaps details on the method of construction of simple but reliable gear is a worry. If assistance is needed in any of these regards, do please contact the Editor. More than likely, others may be facing the same problems, and our Journal is, in these regards, at your service.

-ooOoo-

SERVICE TO MEMBERS

WANTED: On exchange basis, short series of *Zizina otis labradus* from Nhill, Stawell, Ballarat environs. W.N.B. Quick, 20 Alimar Rd., Glen Waverley. V. 3150.

Advertisements for this section are accepted from financial members at 5c per line. Closing date three weeks prior to General Meetings. Advertisements of insects for sale can not be accepted.

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Vol. 3: No. 6, December 1973.

THE VICTORIAN ENTOMOLOGIST

NATIONAL MUSEUM
12 DEC 1973
OF VICTORIA

Journal of
The ENTOMOLOGICAL
SOCIETY of VICTORIA

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The ENTOMOLOGICAL SOCIETY of VICTORIA

Membership

Any person with an interest in entomology shall be eligible for Ordinary Membership. Members of the Society include professional, amateur, and student entomologists, all of whom receive the Society's bi-monthly journal, the "Victorian Entomologist". Excursions are arranged to areas of topical interest at intervals, mainly during the warmer months. Lectures by guest speakers or members are a feature of most meetings, at which there is also ample opportunity for informal discussion between members with like interests.

Objectives

The aims of the Society are:

(a) to stimulate the scientific study and discussion of all aspects of entomology,

(b) to gather, record, and disseminate knowledge of all Australian insect species,

(c) to compile a comprehensive list of all known Victorian insect species, and

(d) to bring together in a congenial and scientific atmosphere all persons interested in entomology.

Meetings

The Society's meetings for 1973 will be held at Clunies Ross House, National Science Centre, 191 Royal Pde., Parkville, at 8 p.m. sharp, on the second last Friday of even months, commencing with the Annual General Meeting in February. Visitors are always welcome.

Annual Subscriptions:	$
Ordinary Member	3.00
Country Member	2.00
Associate Member	1.00
Junior or Student	1.50

(Associate members do not receive the journal.)

Notwithstanding the rates shown herein, rising costs and rates of postage, &c. may at some stage necessitate an increase in annual subscriptions

The statements and opinions expressed in articles herein are the responsibility of the respective authors, and do not necessarily indicate the policy of the Society.

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Phone 231-2233

Diary of Coming Events

December 14th, 1973: GENERAL MEETING---MEMBERS' NIGHT. Clunies-Ross House, 191 Royal Parade, Parkville. Slides welcome (but please let the President know so that a projector can be obtained). Bring a plate of food for supper.

February 15th, 1974: Annual General Meeting.

EXCURSIONS

Christmas/New Year: Extended trip to Suggan Buggan. Final arrangements at December meeting. See also the article on Suggan Buggan in The Victorian Entomologist Vol.2 No.6.

Late January, 1974: Extended trip to East Gippsland sub-tropical rain-forest areas and Cape Everard. Final arrangements at December meeting.

Mid-February, 1974: Whipstick Mallee in Bendigo-Inglewood area. Repeat visit.

N.B. Throughout the summer period excursions could be cancelled owing to fire danger. Arrangements should be checked with the excursion coordinator for the summer period (to be elected at the December general meeting).

Reports and Notices

GENERAL MEETING: Friday October 19th, 1973, at Clunies-Ross House.

The President, Mr C. McCubbin, chaired the meeting, which began at 8.24 p.m. Thirty-eight members and friends were present, and apologies were received from Messrs D. Holmes, R. Manskie, A. Morton, and A. Neboiss, and from Miss L. White and Mrs M. Smith. Mr McCubbin extended his thanks to Mr W.N.B. Quick and Mr J.C. Le Souëf for chairing meetings in his absence. A welcome was extended to two new members, Mr Vincent Salamitri and Mr Peter Christie.

Correspondence was received from:

1. Australian Entomological Society----News Bulletin Vol.9, Part 3.
2. Australian Entomological Society----Journal Vol.12 Nos 1 & 3.
3. TIEG Newsletter Vol.7 No.4.
4. Entomological Society of Queensland----News Bulletin.

General Business

1. Mr J. Hutchinson was elected excursion co-ordinator for the period 19th October to 14th December. Anyone planning an excursion or wishing to obtain further information about excursions, both official and private, is advised to ring Jim at work (231-2233).
2. A number of members offered to bring items of interest to the December meeting; further exhibits would also be very welcome, since the December meeting is a members' night.
3. The minutes of the August general meeting were received.
4. The Treasurer, Mr R. Condron, reported a credit balance of $104.94 and a total of 87 financial members.
5. The Editor, Mr A. Bishop, asked for more articles for The Victorian Entomologist in order that its normal size might be maintained.
6. Two items for further debate were postponed until the annual general meeting in February 1974. These were life membership and supporting membership.

Speaker

The speaker was Mr H. Wilson, the topic being "Insect Pheromones and Telergones", a talk which illness had prevented Mr Wilson from giving at an earlier meeting. The idea of a pheromone was first explained, and then a history of the terminology and research over the last few centuries was given, ending with a resume of current research in this rapidly expanding field. Mr Wilson's talk seemed to capture the imagination of everyone, and a keen discussion ensued.

Exhibits

J.C. Le Souëf: Various insects collected at Yeppoon during a recent trip.
P. Holbery: Victorian insects of various groups, including many Odonata.
R. Besserdin: Results from rum-bait collecting, including an Old Lady Moth (Dasypodia selenophora), a slater (Isopoda), and various beetles and ants.
O. Rogge: Colour photomicrographs of the fine detail and colouration of Cuckoo Wasps (Chrysididae).

COUNCIL MEETING: Friday November 9th, 1973.

1. The Treasurer, Mr R. Condron, reported that two new members had joined, Mr B.J. Berner and Mrs N.E. Harrison.
2. It was pointed out by the Librarian, Mr J.F. Hutchinson, that a record of the society had not been entered in the Conservation Directory published in 1970 by the Australian Conservation Foundation. He suggested that the Secretary should therefore forward such an entry in the form of a condensation of the inside front cover of the journal.
3. Following a recommendation by Mr J. Hutchinson it was decided that a subscription to the Australian Journal of Zoology should be taken out.

PUBLICATIONS COMMITTEE MEETING: Thursday 15th November, 1973.

1. The Editor asked for someone to enquire in his absence at the December general meeting about help from members with the typing of the journal. It was suggested that it might be possible to make a list of members willing to each type, say, one issue per year.
2. Correspondence was reeived from:
   W.N.B. Quick--an apology for an error in the preparation of an article in Vol.3 No.5 of The Victorian Entomologist; this is printed elsewhere in this issue.
   Victorian Fisheries and Wildlife--notice of discontinuation of subscription.
3. The Editor presented for the committee's approval a draft of a letter to be sent to authors together with their proof-read articles. This letter seeks permission from the author to publish the article with any alterations that the committee has thought necessary, and also mentions the availability of reprints. It was decided that the number of reprints obtainable free should be increased: from now on five reprints will be supplied on written request free of charge to the author and further ones will be obtainable at a charge of two cents per page per copy.

-ooOoo-

Letters to the Editor

An Apology

Dear Sir,

In preparing stencils for reproduction of Mr J.C. Le Souef's article entitled "A Social Trip to Brisbane", in Volume 3 No.5 of the Victorian Entomologist, I was confronted with a phrase which appeared to have escaped editorial attention. My attempts to contact the author for verification were, owing to his absence interstate, to no avail, and, anticipating that I was correct in my interpretation of the phrase, I took it upon myself to amend this particular passage.

As it transpired, I was in error, and wish to extend my apologies to the author and our Editor.

The text, as reproduced in the Victorian Entomologist Vol.3 No.5, p.5, line 4 reads "Beset by the winter migration of Victorians escaping their bleak skies, rain and gales, we were thankful to leave this sterile area and return to Currumbin, ...&c." The author's copy did, in

fact read "With the winter migration of Victorians to enjoy the bleak skies, rain and gales, we were thankful to leave this sterile area and return to Currumbin, ...&c.

Sincerely,

W.N.B. Quick.

-ooOoo-

Phasmid Spraying by the Forests Commission of Victoria

The following press release was provided by the Forests Commission in reply to a request for information about aerial spraying to control phasmids, particularly in the Powelltown area. It should be noted that the press release dates from 1971, and so does not necessarily reflect current policy, although no information to suggest changed policies was supplied.

"AIRCRAFT TO FIGHT STICK INSECT PLAGUE"

"In an aerial spraying operation to start this week at Powelltown, the Forests Commission is fighting a plague of forest stick insects. It is threatening over 15,000 acres of some of Victoria's most valuable mountain ash forests, potentially worth more than 150 million dollars at present market values.

"The minister of Forests, the Honorable E.R. Meagher, said today that over a period of two or three years such a plague would defoliate mountain ash forests so that survival of the trees is impossible. In turn, the survival of that part of the native wildlife which depends on a mountain ash habitat is jeopardised. The threatened mountain ash is mostly healthy 30-year old forest which has successfully been regenerated following complete destruction of the original forest in the 1939 holocaust.

"Mr Meagher said that two Piper Pawnee aircraft, fitted with modern spraying equipment, will operate from the Sumner Ridge airstrip, five miles from Powelltown. They will be in constant radio contact with ground units at the airstrip and at control points in the areas being treated.

"To ensure accuracy in depositing the spray, pilots will be guided by huge brightly coloured balloons floating just above the forest canopy. The planes will fly only at 100 - 200 feet whilst on these flight paths. Because of the mountainous nature of the country, only most experienced pilots can be used in this work.

"The insecticide being used is maldison, delivered as a microscopically fine spray which will totally envelop individual leaves as it settles in the forest foliage. This method of application ensures maximum contact with the stick insects, to which minute doses are fatal.

"Maldison has been selected because at this low dosage rate together with the facts that it has extremely low toxicity to warm blooded animals and that, having done its job of killing the stick insects, it breaks down rapidly under sunlight and plant action to a point where residues or side effects are virtually impossible.

"Timing of the operation is critical. Over the next few weeks the insects will mature to the egg laying stage and it is essential that they be killed before then. Winds of more than 2 m.p.h., or excessive rain, will halt spraying operations, which must be completed over the next four weeks."

"19/1/71"

Report of the Excursion to the Whipstick Mallee, October 13 and 14, 1973.

J.F. Hutchinson and S. McEvey.

The first of the Society's planned excursions to the Whipstick Mallee took place in mid-October, with an attendance of about 20 members and friends. Although it had been planned as a two day excursion the majority of the members arrived on the Sunday.

The selected meeting point was Inglewood, situated about 46 km north-west of Bendigo. Surrounding vegetation is of the Mallee type with relatively short multi-stemmed Eucalypts predominating.

Dodder (Cassytha sp.) was present and a search commenced for pupae of Candalides hyacinthinus simplex, unfortunately without success; Tony Bishop however found two pupal cases. It was not very long before an adult was taken, coming into the dodder. On further searching larger areas of dodder were found and searching for pupae appeared a never-ending task.

In some of the cleared areas Eurema smilax (Small Grall Yellow), in conjunction with Anaphaeis java teutonia (Caper White) were seen flying in an easterly direction. A number were taken and seemed in remarkably fresh condition. It appears unlikely that the former is breeding in the area as no soft-leaved Cassias were found.

The following Monday one of us (J.F.H.) was at Cherokee, a small town 8 km N. of Gisborne in the Riddell Ranges, collecting. Here A. java were in large numbers, with up to six adults able to be taken at one time. A single specimen of E. smilax was also taken. Again these butterflies were flying in an easterly direction.

A light trap was set up on Saturday night. In terms of Lepidoptera .. very little came in, mainly Noctuidae. A caddis fly collected at the light was given to Arturs Neboiss and has been identified as Oecetis sp.

On the Sunday the majority of members arrived, their interests being many and varied, making for a day of considerable interest. Dr. Tim New, from Latrobe University Department of Zoology, was interested in collecting Psocoptera (Booklice) and parasitic Hymenoptera, beating the foliage of Eucalypts and Dodder to obtain specimens. Alan Yen, a post-graduate interested in the ecology of Acacia Psyllidae (Hemiptera) was collecting specimens by beating the foliage of wattles, as was David Thomas from Melbourne University, who was collecting Chyromyidae (Diptera).

Gordon Burns and his family were interested in Coleoptera, collecting from the foliage of Eucalypts and Acacias. Representatives of the following families were taken: Chrysomelidae, Curculionidae, Buprestidae, Scarabaeidae, Cerambycidae, Coccinellidae, and Alleculidae (syn. Cistelidae).

A party coming with Nigel Quick were mainly after Lepidoptera, with Charles McCubbin collecting a variety of orders.

The Bendigo Field Naturalists Club have published in recent editions of the "Bendigo Naturalist" a series of plant distribution maps of the Whipstick Mallee north of Bendigo. Included amongst the recorded flora of the area are Choretrum glomeratum and Santalum acuminatum (Bitter Quandong), the host plant of Ogyris otanes and one of the hosts of Delias aganippe respectively. The former was located together with ants and on one occasion with immature jassids, very similar to the relationships as seen in the Big Desert, but with the notable difference that the butterfly was apparently absent from the plants.

List of butterflies taken on the excursion:

Candalides hyacinthinus simplex (Common Dusky Blue)
Neolucia serpentata serpentata (Chequered Blue)
Zizina otis labradus (Common Grass Blue)
Eurema smilax (Small Grass Yellow)
Pieris rapae (Cabbage White)
Danaus chrysippus petilia (Lesser Wanderer)
Vanessa kershawi (Painted Lady)
V. itea (Australian Admiral)
Precis villida calybe (Meadow Argus)
Papilio demoleus sthenelus (Chequered Swallowtail)

-ooOoo-

Some Recent Papers on the Lepidoptera

Compiled by J.F. Hutchinson

This is a list of some papers published over the past few years that may be of particular interest to members interested in the Lepidoptera. Copies of all of the articles listed are in the possession of the compiler, and if requests are received photocopies will be supplied at a cost of 2 cents per page plus postage, monies received being donated to the Society.

1. On Ornithoptera priamus caelestis Rothschild, demophanes Fruhstorfer and boisduvali Montrouzier (Papilionidae)
   by H. Borch and F. Schmid
   J. lep. Soc. 27(3): 196-205. (1973)

2. Sur Quelques Sous-especes d'Ornithoptera victoriae Gray (Papilionidae)
   by F. Schmid
   Naturaliste can. 97: 467-475. (1970)

3. Sur Quelques Sous-especes d'Ornithoptera victoriae Gray (Papilionidae) II.
   by F. Schmid
   Can. Ent. 105: 701-705. (1973)

4. The effect of Micro-cauterizing the Al PPM (Gold Spot of Authors) on the Pupa of the Monarch Butterfly, Danaus p. plexippus (Lepidoptera: Danaidae).
   by F.A. Urquhart
   Can. Ent. 104: 991-993. (1972)

5. Factors Determining Mating Frequencies in Some New World Butterflies and Skippers.
   by T.E. Pliske
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6. Host Plant Suitability and the Mechanism of Host Selection in Larvae of Papilio machaon.
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7. Clinal Variation in Pattern and Colour in Coastal Populations of the Butterfly Tisiphone abeona (Donovan) (Lepidoptera: Satyrinae).
   by A.M. Lucas
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8. Genetic and Environmental Factors Influencing Pupal Colour in the Swallowtail Butterflies Battus philenor (L.) and Papilio polytes (L.)
   by C.A. Clarke and P.M. Sheppard.
   J. Entom. (A) 46: 123-133. (1972)

Notes on the Life Cycle of Cyclochila australasiae (Hemiptera: Cicadidae).
by C.W. McCubbin

In November 1966 a number of freshly-emerged specimens of Cyclochila australasiae (Green Monday Cicada) were placed inside a netting enclosure on the lower branches of a Eucalyptus nicholli in the writer's garden in the Melbourne suburb of Box Hill North. The E. nicholli had been planted seven years before and had been under close observation since then. No cicadas had been heard singing in the area during those seven years and trees in the immediate vicinity had been planted after the E. nicholli. The cicadas used in the experiment were obtained as they emerged from the ground in a public park in the nearby suburb of Camberwell and from Ferntree Gully. Those from Camberwell were all green in colour while those from Ferntree Gully were all orange and black. About twelve cicadas were obtained from each site, the number of males being slightly greater than the number of females. Mating was encouraged by placing females next to singing males and mating occurred both between individuals of the same colour and between individuals of different colours. Colour photographs were taken of some of the mating pairs.

On October 20th 1973 cicada shells were noted on the E. nicholli for the first time since it was planted. Unfortunately the writer left on the following day for a two week field trip and no observation was made of the colour of the cicadas that had emerged. Wings of two green cicadas (apparently eaten by birds) have since been found in the area but owing to almost continuous cool weather no further emergence has been observed, nor has any adult been heard singing. The experiment was unfortunately marred by the introduction of further cicadas to the area in the years following 1966; it does however seem reasonable that the cicadas that emerged this year on the E. nicholli did not have a life cycle of more than seven years.

-ooOoo-

CORRECTION

In Vol.3 No.4 of The Victorian Entomologist, page 14 (The Hymenoptera: Gasteruptiidae) the word "style" should be replaced by "terebra".

-ooOoo-

The reason why this issue is so thin is that not enough articles are being supplied to sustain the magazine. Right now many articles are needed for coming issues. If they are not received, the magazine will degenerate to being a mere newsletter and will scarcely be worth publishing, especially with the increasing postal charges. Original articles are preferred. Articles by non-members are accepted, provided they are communicated to the Editor by a member.

Articles should be completely legible, and must be double-spaced. It would be appreciated if two copies were supplied (e.g. the original and a carbon copy or photocopy), although this is not absolutely essential. Both copies should be posted to the Editor.

-ooOoo-

The Editor and the Committee wish all members a happy Christmas and a successful summer's collecting.

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